Bitcoin, Digital Currency and the Internet of Money

Innovations in Global Commerce

- **The history of money includes seeking better ways for exchanging produces and services.** This process often includes applying recent advances in technology. Digital currency represents such a technology advance, and Bitcoin as the market leader, is increasing our understanding of its potential to drive innovation in global commerce.

- **Digital currencies should introduce health competition into the monetary system that** 1) brings cost and operational improvements to typical credit and banking transactions, as well as interbank and cross-board fund transfers, 2) expand the opportunities for micro-finance, 3) provide an alternative to unstable currencies and 4) create new classes of applications and programmable services.

- Bitcoin's position as the market leader has drawn significant attention as both a form of **currency to store value** and as a **global payment system that provides a cost-effective way to transfer value**. Its **success will be dependent on the trust and support of its global community of users** rather than the efforts of central bankers.

- **The Bitcoin architecture may be as transformational to global commerce as the World Wide Web's Hypertext Transfer Protocol (HTTP)** and **HyperText Markup Language (HTML)**, which changed the process of content creation and distribution. This platform may evolve to support programmable services and manage other digital assets while enhancing our view of what digital currency is and how it is used.

- **Amid uncertainty by many global policymakers, Benjamin Lawsky, New York State Superintendent of Financial Services held hearing on the topic (Jan 28-29, 2014).** His introductory comments included *"virtual currency could ultimately have a number of benefits for our financial system. It could force the traditional payments community to "up its game" in terms of the speed, affordability, and reliability of financial transactions. I think many consumers – myself included – are perplexed that, in a world where information travels around the globe in a matter of milliseconds, it can often take several days to transfer money to a friend's bank account. Moreover, the open-source nature of this technology, relatively low (financial) barriers to entry, and nascent nature of this industry mean its constantly evolving."*

- **Short-term focus** has been on regulatory uncertainty, price swings and support by on-line merchants. **Long-term success** will require 1) executes transactions in a secure and timely fashion, 2) providing services that are easy to use and access and 3) adapting to a growing community of users. In addition, competition will likely emerge from incumbent players as well as payment service introductions by firms such as Alibaba, Amazon, Apple, Google, PayPal, Starbucks, Square and Tencent.

- **This report includes** a history of currency**,** "Bitcoin 101: A Few Basics", initiatives by global regulators, a timeline of notable events, firms developing products and services, and architectural innovations supporting the "Internet of Money".

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Observations to Consider

The digital currency Bitcoin has become a global phenomenon, but separating "hype" from "reality" can be a challenge. The observations below may help in understanding the current state of the market.

Bitcoin related comments during the **2014 World Economic Forum** in Davos, Switzerland included:

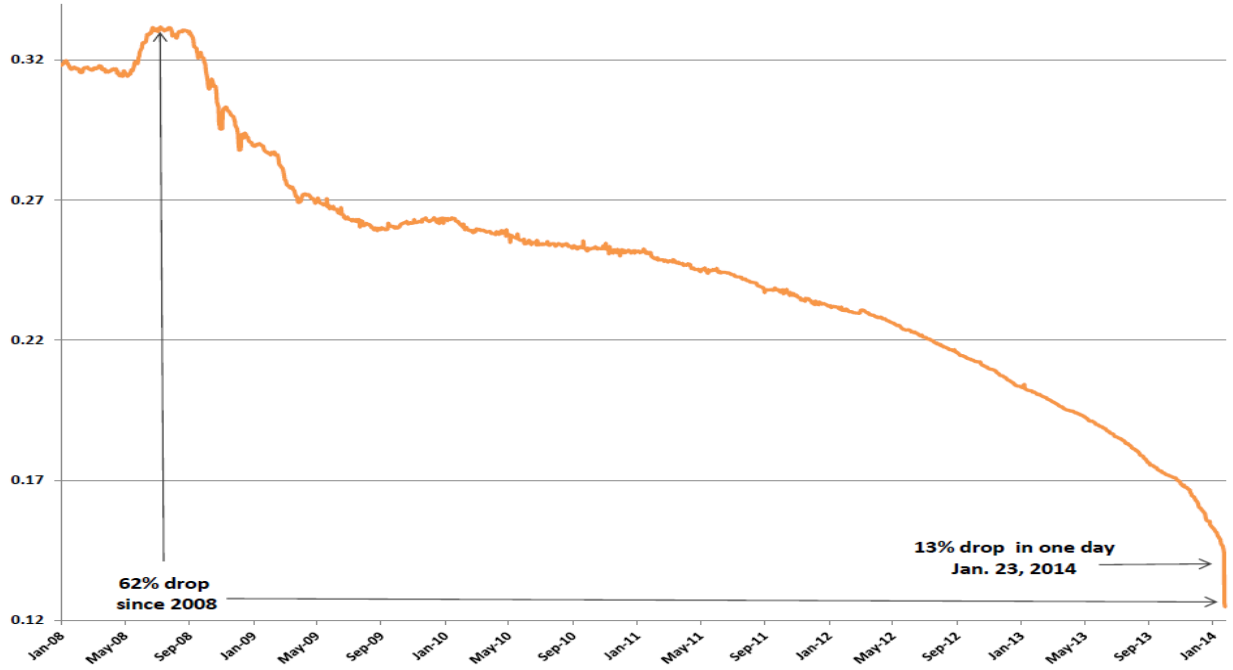
- **U.S. Treasury secretary Jack Lew**: "*From the government's point of view, we have to make sure it does not become an avenue to funding illegal activities or to funding activities that have malign purposes like terrorist activities"*
- **JPMorgan CEO Jamie Dimon**: *"The question isn't whether we accept it. The question is do we even participate with people who facilitate Bitcoin?"* **Note:** JP Morgan is pursuing patents for its own version of digital currency.
- **Virgin Group founder Richard Branson**: "*Whoever is behind Bitcoin was brilliant* "and "*Whether Bitcoin's the one, I think there will be a global currency that will take on Jamie Dimon and the other banks*".

In the **Chicago Federal Reserve report "Bitcoin: A Primer (December 2013),** senior economist François R. Velde said:

"Should Bitcoin become widely accepted, it is unlikely that it will remain free of government intervention, if only because the governance of the Bitcoin code and network is opaque and vulnerable. That said, it represents a remarkable conceptual and technical achievement, which may well be used by existing financial institutions (which could issue their own Bitcoins) or even by governments themselves."

The decline of the Argentinian Peso, presented in chart 1, illustrates the vulnerability a country can have in managing the value of its currency. Budget and inflation issues contributed to the 62% drop since 2008 and its 13% declined on January 23, 2014. This single day drop triggered riots within the country and uncertainty across global markets. Some citizens used Bitcoins and other currencies to avoid the devaluation.

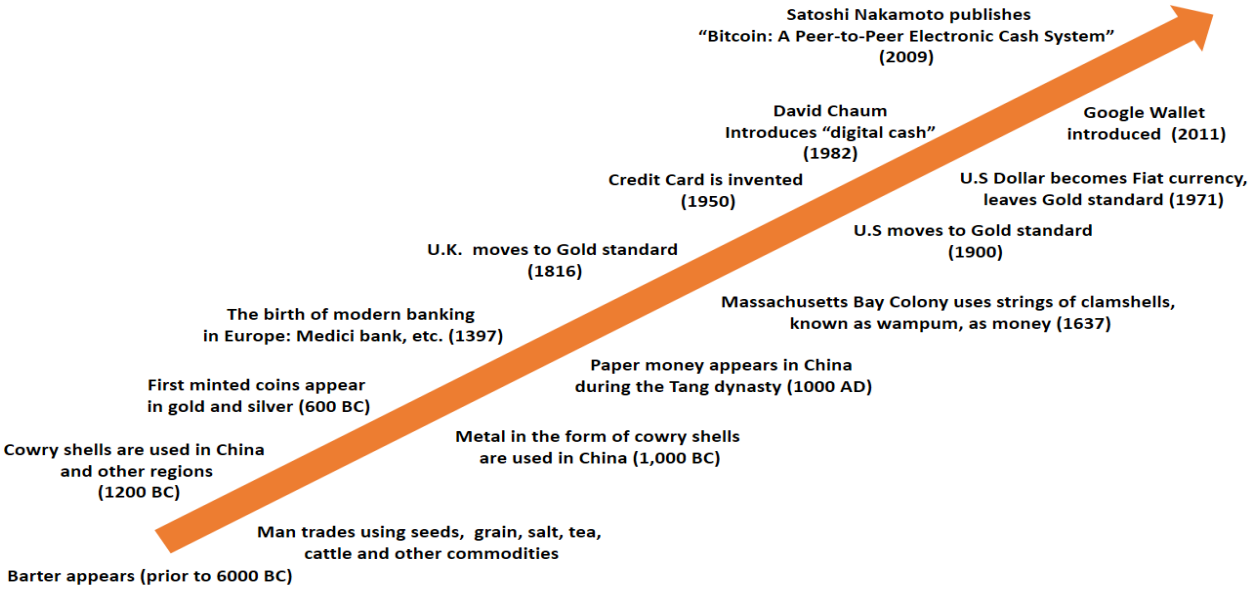
Chart 1: Decline of Argentinian Peso vs. U.S. Dollar (January 2008 to January 25, 2014)



The Path toward Digital Currencies

Money was created as a transfer mechanism to help people exchange goods and services. Its history started with barter, where people would exchange an item such as **rice** for another item such as **beans**. As man's needs expanded, he started using commodities, such as **salt**, **seeds**, **tea**, **and tobacco** and **seashells** as a unit of value. Around 5,000 B.C., **metals objects** were introduced as money and by 600 BC, metal formed as coins appeared and soon they were minting with specific values. **China** was among the first countries to introduce **paper money** around 1,000 AD. **Paper** money was often backed by a government or a bank's promise to exchange it for a certain amount of **silver** or **gold**.

Chart 2: A Brief History of Money (6000 BC to present)



Early 1920s – Over the centuries, changes in currency were drive by need, politics and new technology. The inventor **Thomas Edison** hoped for a change when said, "**Gold is a relic of Julius Caesar, and interest is an invention of Satan**" and promoted the idea that commodities such as **power** back the financial system. His efforts, inspired by recent technological advances and his business needs, were unsuccessful.

1972 - Fiat and the beginning of virtual currencies. During the 20th century, many governments moved away from linking money to commodities such as **gold**, and **set the value of currency by government fiat** or decree, with central banks such as the U.S. Federal Reserve managing this process.

1982 - Digital currency enters the stage. Computer scientist **David Chaum** introduced the idea of "**digital cash**" in a 1982 research paper that stated while "some forms of money are already in digital formats" such as credit, debt cards and electronic transfers "all these forms of electronic money are not digital cash, because they do not meet some **essential requirements for digital cash, such as anonymity, unlinkability, and/or transferability**."

1984 – A banker links digital technology with money. In 1984, **Citibank CEO, Walter Wriston** highlighted the linkage between digital technology and money when he said: "**Information about money has become almost as important as money itself**".

1999 – A Nobel Prize economist speaks out. In 1999, **Milton Friedman** provided additional insights when he stated, "the Internet is going to be one of the major forces for reducing the role of government. The one thing that is missing is **a reliable e-cash, a method by which on the internet you can transfer funds from A to B anonymously**."

2008 - The birth of Bitcoin. In 1998, **Dr. Wei Dai** published a description of "b-money", an anonymous, distributed electronic cash system. Between 1988 and 2005, **Nick Szabo** developed "bit gold", a mechanism for supporting a decentralized digital currency. It is widely regarded these and other works contributed to Bitcoin's birth in the 2008 publication of "**Bitcoin: A Peer-to-Peer Electronic Cash System**" by **Satoshi Nakamoto**, which presented the Bitcoin concept and how its distributed network should work.

January 2014 – Digital currency represents a small fraction of the global currency market, but it is on the agenda of many policymakers, global business leaders, technology developers and investors.

Digital Currency Innovation Requires Managing Risk

Digital currency platforms, including Bitcoin, should grow as policy makers, businesses and consumers increase their understanding of its potential benefits. A key supporting trend is the increasing shift toward on-line global commerce. However, **this market is at an early stage of development, it is important to understand its risks while managing unforeseen missteps and unexpected innovation**.

Specifically with Bitcoin, much of its values comes from its **decentralized nature. Because of this structure, Bitcoin's value and integrity will always be dependent on the trust and support provide by its community of users**.

Digital currencies, as both a global payment service and a global unit of value, may lead to:

- **Reduced costs** and improve **operational efficiencies** in cross-border transactions.
- Providing an **alternative store of value to currencies** that are vulnerable to devaluation or pricing instability.
- **Competition with traditional banking, credit card and online payment services**, where fees are passed on to consumers in the form of higher prices for goods and services.
- Bitcoin's "first mover advantage" may help to **avoid fragmentation** in the digital currency market.
- The development of **new classes of applications, services and asset classes**, which may reshape our view of what digital currency is and how it will be used.

The risks associated with digital currencies include:

- **Compliance** with Anti-Money Laundering, Know Your Customer (AML/KYC) standards may become a barrier to entry for some smaller innovative start-up initiatives.
- **Uncertainty** among policy makers and regulators which, in the short term is holding back the market's growth. Longer term, regulations may diminish the potential for transaction fee reduction.
- **Unrealistic expectations** of cryptographic capabilities as well as service levels in large-scale transaction environments.
- **Price volatility**, exhibited by Bitcoin during 2013, may attract speculative trading while diverting it from its intended use as a mechanism for exchange.
- The participation of firms such as **Alibaba**, **Amazon**, **Apple**, **Google**, **PayPal, Starbucks**, **Square** and **Tencent** in the payment services market may reduce the opportunity for some digital currency initiatives.

A better understanding of how digital currencies fits into legal and regulatory framework, along with increased adoption and use, should mitigate some risks and concerns.

Policymakers Assess Uncharted Territory

The technology of digital currencies are **moving many local and global regulators and policymakers into uncharted territory.** Questions to consider include 1) how is it taxed, 2) what type of asset is it - currency, commodity or something else, 3) when problems develop, what is the process for legal recourse and 4) how will it impact the global monetary system.

Understandably, decision makers are taking a cautious approach in the development of rules and guidelines. What they learn and the directions taken by their global counterparts will drive this dynamic process.

Table 1 presents diversity views from several global players.

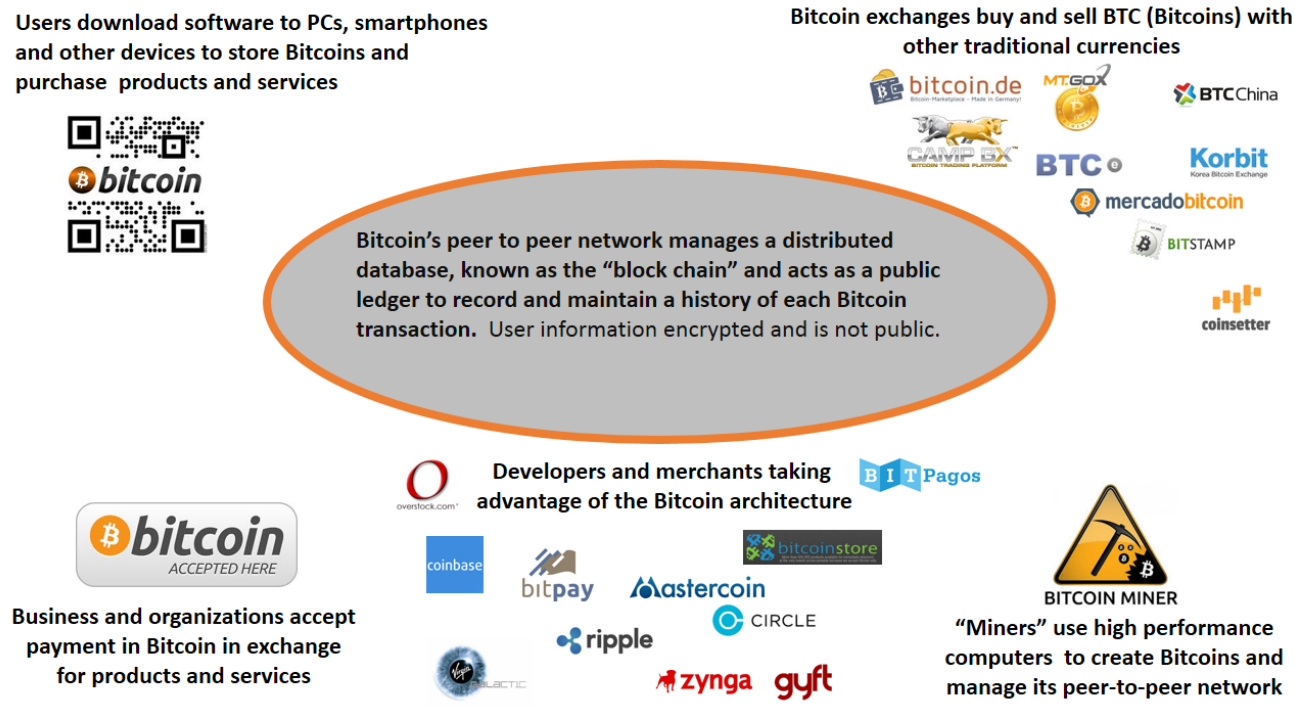
Table 1: Perspectives from Government Regulators

Country	Status
Canada	- Bitcoin, and other digital currencies, are not considered legal tender.
China	- China's central bank banning lenders from handling the virtual money. Bank of China warned that the virtual currency was "not a currency in the real meaning of the word," barring banks from issuing accounts denominated in Bitcoin. Chinese regulators urged businesses to stop working with Bitcoin exchanges in China
Denmark	- Denmark's financial is developing recommendation on how to treat Bitcoin and other digital currencies.
Finland	- Central bank states that Bitcoin is neither a currency nor a payment system, but is more like a commodity. Finland's Financial Supervisory Authority said for now it cannot regulate Bitcoins or similar software.
Germany	- Bitcoin is not a foreign currency, but is a financial instrument similar to "private money" that can be used in "multilateral clearing circles."
India	- "The Reserve Bank of India has today cautioned the users, holders and traders of Virtual currencies (VCs), including Bitcoins, about the potential financial, operational, legal, customer protection and - security related risks that they are exposing themselves to."
Japan	- No formal policy announced. Mt. Gox, one of the leading Bitcoin exchange operates in Japan.
Malaysia	- A warning from it central bank said "The Bitcoin is not recognised as legal tender in Malaysia," and "the Central Bank does not regulate the operations of Bitcoin. The public is therefore advised to be cautious of the risks associated with the usage of such digital currency."
Norway	- Norwegian government says Bitcoin is not a currency.Tax department has decided to label it a taxable asset.
Russia	Russian Central Bank warns against using digital currencies and believes they are "money surrogats" and therefore illegal.
Singapore	- Government has provided guidance on how merchants can handle capital gains, earnings, and sales tax on Bitcoin exchanges and Bitcoin-related sales.
South Korea	- Bank of Korea suggests that Bitcoin should be made accessible to the public.
Sweden	- Swedish Tax Agency recommends that Bitcoin is not a currency, but rather an asset similar to antiques, jewelry and stamps.
Thailand	- Preliminary ruling that Bitcoin is illegal because of a lack of existing laws dealing with digital currencies. The Bank of Thailand is looking into the matter further.
United Kingdom	- Tax authority are considering whether Bitcoins should be liable for value-added tax,
United States	- The **U.S. Internal Revenue Service** has not offered guidance on Bitcoin beyond saying it is working on the issue and that it has been monitoring digital currencies and transactions since 2007. - **New York State Department of Financial Services** (NYDFS) "Virtual currencies may have a number of legitimate commercial purposes, including the facilitation of financial transactions. Considering the issuance of a 'BitLicense', Held hearing Jan. 2014.

Bitcoin 101: A Few Basics

Building the Bitcoin community. Similar to other communities, Bitcoin's long-term growth and success will depend on the trust and cooperation of its members. Its community of users include: 1) consumers using Bitcoin to acquire goods and services, 2) merchants providing goods and services in exchange for Bitcoin, 3) "miners" operating computers that process Bitcoin transactions and support its distributed network 4) organizations building new products and services that leverage Bitcoin's distributed network infrastructure and 5) exchanges converting tradition currencies into and out of Bitcoins.

Chart 3: An overview of the Bitcoin environment



How does Bitcoin work? Bitcoin acts as both a payment system and a currency and, unlike traditional currencies, Bitcoins are created and exchanged on a decentralized network. The Bitcoin network does not rely on any governmental authority, but the reliability of its cryptographic protocol is dependent on the trust and integrity of its users. Users can download software applications called a wallet to buy, send and receive Bitcoins. Each wallet has a distinct alphanumeric address, somewhat like a bank account. Users can store Bitcoins on their computer, smartphone, memory stick or at an online wallet service.

Bitcoin's network uses a peer-to-peer data transfer protocol operating in a fashion similar to music and file share services. This network has a **public ledger** called the **block chain**, which records a history of all transactions including 1) payments for goods and services, 2) purchases of Bitcoins on an exchange and 3) transfers of Bitcoins between people or organizations.

Bitcoins can be obtained by: 1) exchanging traditional currencies such as **Dollars**, **Yen**, and **Euros** via an on-line exchange or payment process such as **Mt. Gox**, **Coinbase**, and **Kraken**, 2) using a Bitcoin enabled ATM, 3) accept Bitcoins when selling a product or service or 4) through Bitcoin mining efforts.

Creating Bitcoins – a mix of high-end math and high-end computers. Bitcoins are created through a system called mining. A miner creates Bitcoins using software to solve math problems that help verify Bitcoin transfers on the network. For this effort, the miner receives a certain number of Bitcoins. Mining is a

computationally intensive process that requires significant processing power. As a result, these mining efforts require specialized data services.

How many Bitcoins are there? The original Bitcoin design has a creation limit of 21 million Bitcoins. Today, there are 12 million Bitcoin available. Because creating Bitcoins is computationally intensive, estimates suggest that it will take until about 2140 to reach the 21 million limit.

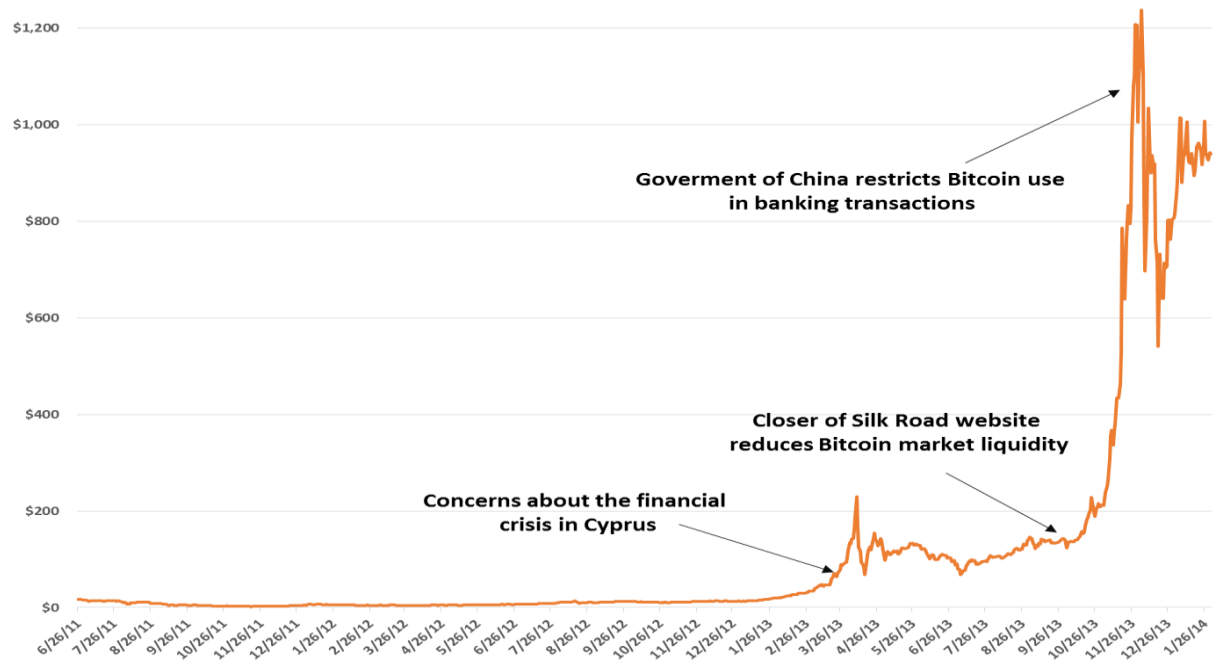
Many transactions will use a fraction of a Bitcoin. A single Bitcoins is currently valued at about $850, but many transactions will have a value of a fraction of a Bitcoin. Because a Bitcoin can be divided out to eighth decimal places, with such as milli-bitcoins (mBTC) or micro-bitcoins (µBTC) will be used. The universe of 21 million Bitcoins can be divided into 2,000 trillion unique units.

An Early Stage Market with Heightened Price Volatility

Bitcoin had a sharp price increase during 2013, along with broad positive and negative price swings. Contributing factors included significant news items, the relatively small size of the Bitcoin market and low levels of liquidity. To understand the relative size of Bitcoins in circulation, the **U.S. money supply** is valued at about **$10.8 trillion** and its average daily trading on global foreign exchange markets is about **$4 trillion**. With about 12 million Bitcoins in circulation, its total **market value is about $20 billion** and **daily trading** is valued at less than **$40 million.** Chart 4 presents Bitcoin's price history.

As Bitcoin based purchases increase and speculative trading declines, price volatility should decline as well.

Chart 4: Bitcoin Price in U.S. dollars (June 2011 – January 2014)



U.S. investors can access the Bitcoin market via funds such as the **Bitcoin Investment Trust.** This fund launched during September 2012 by **SecondMarket**. In addition, the **Winklevoss Bitcoin Trust ETF** is an exchange-traded fund developed by Cameron Winklevoss and Tyler Winklevoss that is in the approval review process at the U.S. Securities and Exchange Commission. There is speculation that hedge funds and private equity firms are also consider offering digital currency focused funds.

Moving Toward the "Internet of Money"

The concept of "**Internet of Things**" has gained increased attention as we interact with a diverse set on Internet connected devices such TV, thermostats, lights, fitness bands in addition to PCs, tablets and smartphone. Many devices are also operating independent of human involvement.

Digital currencies may drive similar innovation in global commerce. In the "**Internet of Money**", we interact with digitized units of value, and innovations may lead to "value-added" services and programmable features that manage "coins", along with digital assets and services such as contracts, reward points, vouchers, media content, crowd funding, gambling and more.

This new wave of innovation is changing how we view and use currency. It is also attracting developers to enhance the Bitcoin architecture as well as introduce competitive alternative offerings.

Table 2: Bitcoin Derivatives and Alternatives

Project		Description
Bitcloud	-	Early stage project/concept leveraging the ideas of Bitcoin, Mediaglobin, Tor and others and hopes to "decentralize" the Internet.
Colored Coins	-	A project to use Bitcoins to represents other assets, such as stock in a company, gold, or a US Dollar will leveraging Bitcoins peer-to-peer network.
Dogecoin	-	Based on publically available Bitcoin source code, this effort is backed by Billy Markus (a former IBM programmer based in Oregon) and Jackson Palme (an Australian in Adobe's marketing department). A Dogecoin campaign was used to raise over $30,000 to support the Jamaican Olympic Bobsled team.
Ethereum	-	A next-generation distributed cryptographic ledger designed to support advanced transaction types, smart contracts and decentralized applications into the blockchain.
JP Morgan Chase	-	Filed an application with the U.S. Patent and Trade Office for a digital payment system that includes digital wallets, anonymous money transfer and a virtual private lockbox. Patent application number: 20130317984.
Litecoin	-	A peer-to-peer Internet currency based on the Bitcoin protocol but added to support consumer-grade hardware in the mining process.
Mastercoin	-	Supports the creation and trading of smart properties and user currencies, as well as other types of smart contracts. Serve as an exchange between bitcoins (BTC), smart properties and smart contracts using Mastercoin Protocol.
MintChip	-	A secure smart card chip with digital currency that is backed by the Government of Canada.
Ripple	-	An open source based payment network designed to support any currency (dollars, yen, Bitcoin, etc.) as well its own Ripple currency called XRP. Ripple uses a shared, public database and a ledger that can also hold information about other currencies and assets.
Zerocoin	-	Initially proposed as a Bitcoin extension to support anonymity at for both users and transactions recorded in the Public Ledger blockchain. This project is now focusing on releasing its own independent cryptocurrency.

Because of Bitcoin's first mover advantage, most digital currency investments and development resources have focused on the Bitcoin opportunity. This is a nascent and quickly evolving market. It may be early to distinguish the winners from the losers. Table 3 presents a sampling of initiatives in areas such as trading/currency exchange, digital wallets, merchant/payment services, mining, and security and identity protection.

Table 3: A Selection of Firms Adding Value in the Digital Currency Market (as of January 2014)

Company		Description
Alydian	-	Delivering turnkey Bitcoin mining services
artaBit	-	Bitcoins can be bought and sold in exchange for Indonesian rupiah (IDR)
Asia Nexgen	-	Easy, secure and affordable exchange in Hong Kong
Betcoin.com	-	Gambling platform based in the U.K.
Bex.io	-	Building white-label Bitcoin Exchange and Market Maker as a Service.
Bips	-	A payment solution provider within Europe.
Bitbox	-	A Bitcoin exchange and payment processor that allows anyone to store, trade, and track bitcoin.
Bitcoil	-	Platform to exchange between Bitcoins and Israeli New Shekels
Bitcoin To You	-	Bitcoin Exchange based in Brazil
BitInstant	-	Payment processor for bitcoin exchanges and other merchants based in the U.S.
BitPagos	-	A payment gateway focused on the Latin America market.
BitPay	-	Providing is Bitcong payment processing to online merchants in over over 200 countries.
Bitstamp	-	An exchange in Slovenia, where users can trade between Bitcoins and US Dollars.
Bitwall	-	Allow publishers and digital creators to monetize their content through micropayments.
BTC China	-	Considered to be the world's largest Bitcoin exchange (based in China)
BTC Trip	-	Supporting the purchase of airline tickets with Bitcoin.
Buttercoin	-	High Volume Trading engine
Circle	-	Providing online and in-person digital payment services and lower costs for businesses.
Coinbase	-	Provides online digital wallet to buy and accept Bitcoin and payment processing for merchants.
Coinlist.me	-	Craigslist type of on-line service supporting Bitcoin transactions.
Coinsetter	-	A secure Bitcoin trading platform with tools for serious forex traders.
CoinTerra	-	ASIC Processor manufacturer focusing on Bitcoin mining
Crypto-Currency Analytic	-	Creating a multi-exchange Bitcoin trading service as well as investment analysis in cryptographic currencies
Gliph	-	Brings the Bitcoin world to mobile device.
GoCoin	-	Stripe for the bitcoin space. Payment API for merchants in Singapore.
Gyft	-	A digital gift card platform that enables you to manage your gift cards.
HashFast Tech.	-	Producing high-performance ASICs used for bitcoin network verification.
itBit	-	Trading platform for professional investors in Singapore
Korbit	-	Bitcoin exchange in Korea
Kraken.com	-	Developing web products with exchange and wallet services.
Lamassu	-	Developing Bitcoin ATM what will accept currencies from over 200 countries.
MaiCoin	-	Developing digital currencies services to address Asian markets
MegaBigPower	-	Bitcoin miner of Bitcoins that also provides hosting services.
MtGox	-	Early leader as a Bitcoin exchange
MultiBit	-	A secure, lightweight, international Bitcoin wallet for Windows, MacOS and Linux
Robocoin	-	A bi-directional Bitcoin ATM to buy and sell Bitcoin. Launched October 26, 2013 in Vancouver.
TruCoin	-	Trading platform that combines multiple major Bitcoin exchanges with one easy to use interface.
Vaurum	-	A cryptocurrency exchange for financial institutions to trade bitcoin over the counter.
VerifyBTC	-	Allows identity verification in Bitcoin and provides a frictionless authentication experience.
ZipZap	-	Global cash payment network with 700,000+ locations in the US, Brazil, Russia and CIS countries.
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Appendix 1: A Timeline of Notable Events (through Jan. 2014)

Date	Event
Nov. 1, 2008	Satoshi Nakamoto releases research paper discussing the Bitcoin protocol.
Jan. 12, 2009	First Bitcoin transaction takes place. Satoshi Nakamoto sends 10 Bitcoins to developer and cryptographic activist, Hal Finney.
July 6, 2011	Payments go mobile with Bitcoin for Android, the first of many Bitcoin related Apps for smartphones and tablets. The App's code was made open source by the developer Brian Armstrong, who co-founded Bitcoin wallet provider, Coinbase.
Sept. 27, 2012	**Bitcoin Foundation** formed with a goal to standardize, protect and promote Bitcoin.
March 2013	**Government of Cyprus** financial crisis triggers banking withdrawns, some funds go into Bitcoins.
March 18, 2013	The **US Financial Crimes Enforcement Network (FinCEN)** issued guidance to clarify regulations "to persons creating, obtaining, distributing, exchanging, accepting, or transmitting virtual currencies," including Bitcoin.
April 16, 2013	On-line dating site **OKCupid.** Starts accepting Bitcoin payments via a partnership with **Coinbase**.
July 30, 2013	Government of Thailand rules that Bitcoin as illegal. Bitcoin Co. Ltd. Thailand suspends trading
Aug. 11 2013	**Bitcoin Foundation** announced that a bug in software within the Android operating system had been exploited to steal from users' wallets
Oct. 1, 2013	**Ross Ulbricht** arrested in San Francisco for running the most "sophisticated and extensive criminal marketplace on the Internet" **Silk Road** used Bitcoin, an electronic currency untethered to any government, to help keep the deals secret, prosecutors said. In addition to the drugs, according to a federal complaint, Silk Road facilitated deals on computer hacking, forgeries, even hitmen.
Nov. 1, 2013	The world's first Bitcoin ATM opened in Vancouver, Canada.
Nov. 18 and 19, 2013	**U.S. Senate's Homeland Security and Governmental Affairs Committee** and the **Senate Banking Committee** met jointly to discuss risks and potential benefits of Bitcoin and other "virtual currencies." **Federal Reserve Chairman Ben Bernanke** informed the Hearings the Fed "would only have authority to regulate any virtual currency product if it is issued by, or cleared or settled through, a banking organization that we supervise."
Nov. 22, 2013	**Sir Richard Branson** announces that space flight venture **Virgin Galactic** will accept Bitcoin as payment. He called it "a new exciting currency."
Nov. 29, 2014	**Bitcoin price hits all-time high** of $1,242 on the **Mt. Gox** exchange, up 10,250% for the year.
Dec. 2013	Leading adult entertainment site **Porn.com** starts accepting Bitcoin payments in addition to credit card payments, PayPal and online checks.
Jan. 6, 2014	**Zynga Inc.** is conducting a Bitcoin test with BitPay (https://bitpay.com/), a leading Bitcoin service provider, in select Zynga.com web games.
Jan. 6, 2014	"**Mia and Taylor's Coffeeshop**," accepts Bitcoins via the large QR code plastered to the booth in the Noe Valley section of San Francisco.
Jan. 9, 2014	**Government of Singapore** tax authorities' notes that companies in the business of buying and selling Bitcoins will be taxed based on the gains from their sales. However, if Bitcoins form part of a company's investment portfolio for long-term investment purposes, any gains would be capital in nature and therefore will not be subject to taxation.
Jan. 9, 2014	**Overstock.com** becomes the first major retailer to accept Bitcoin. Teaming up with Coinbase to process Bitcoin payments,
Jan. 16, 2014	**Sacramento Kings** basketball team becomes first major professional sports franchise to accept Bitcoin and will use payment processor BitPay.

Appendix 2: Terms to Know

Term		Description
AML/KYC compliance	-	Regulations addressing **Anti-Money Laundering (AML)** and **Know Your Customer (KYC)** dynamics.
Bitcoin	-	Term used to describing the concept of Bitcoin as well as a unit of digital currency. Abbreviated as BTC or XBT.
Block	-	A block is a record in the block chain that contains and confirms many waiting transactions. Roughly, every 10 minutes, on average, a new block including transactions is appended to the block chain through mining.
Block Chain	-	The block chain is a public record of Bitcoin transactions in chronological order. The block chain is shared between all Bitcoin users. It is used to verify the permanence of Bitcoin transactions and to prevent double spending.
BTC	-	BTC is the common unit of Bitcoin currency. It can be used in a similar way to USD for US dollar instead of ฿ or $.
Cryptography	-	A branch of mathematics to high levels of security.
Digital currency	-	Electronic money that acts as alternative currency. The current focus is on alternative digital currencies that are not produced by government-endorsed central banks nor necessarily backed by national currency.
Fiat money	-	Money declared by a government to be legal tender.
Financial Crimes Enforcement Network (FinCEN)	-	A bureau of the **United States Department of the Treasury** that collects and analyzes information about financial transactions in order to combat money laundering, terrorist financiers, and other financial crimes.
Mining	-	Bitcoin mining is the process of making computer hardware perform mathematical calculations for the Bitcoin network to confirm transactions and increase security. As a reward for their services, Bitcoin miners can collect transaction fees for the transactions they confirm, along with newly created Bitcoins. Mining is a specialized and competitive market.
Open Source Software	-	A computer program where the source code is available to the public for use and/or modification from its original design.
Peer-to-peer (P2P)	-	Refers to systems that work like an organized collective by allowing each individual to interact directly with the others. In the case of Bitcoin, the network is built in such a way that each user is broadcasting the transactions of other users. And no bank is required as a third party.
Private Key	-	A private key is data that proves a right to spend Bitcoins from a specific wallet through a cryptographic signature. The private key is stored on a computer, smartphone, table, or storage device it a software wallet is used. The key can also be stored on remote servers if a web wallet is used.
QR code (quick response code)	-	Developed as a type of matrix barcode for the automotive industry in Japan. It is used to identify Bitcoin accounts.
Satoshi Nakamoto	-	The pseudonymous person or group that designed and created the Bitcoin protocol and reference software. Debates continue about who **Satoshi Nakamoto** is. The most frequently mentioned is that it is the combined work of **Wei Dai** - who wrote about "b-money", an anonymous, distributed electronic cash system. , **Nick Szabo** - known for his research in digital contracts and digital currency developed “bit gold” as a mechanism for supporting a decentralized digital currency and **Hal Finney** – a developer of cryptographic technology. Others have speculated that its creator is mathematician **Shinichi Mochizuki**, the combined work of **Samsung**, **Toshiba**, **Nakamichi** and **Motorola** or even the **U.S. National Security Agency**.
Silk Road	-	Online black market operated as a hidden online service. Sometimes called the Amazon.com or EBay for illegal drugs, passport forgery services and computer hacking services. On October 2, 2013, the FBI shut down Silk Road and arrested **Ross William Ulbricht** on charges of alleged murder for hire and drug violations.
Volatility	-	A measure for variation of price of a financial instrument over time.
Wallet	-	The wallet contains a private key which Bitcoins allocates from the block chain to be used in purchases. The Bitcoin wallet can show the total balance of Bitcoins it controls and lets you pay a specific amount to a specific person, similar to a physical wallet.

About Future Perfect Machine

We develop partnerships and strategies to deliver innovative and sustainable solutions that benefit individuals, communities and society.

Our team is a collective of smart and fun people with strong creative, technical, business and educational skills. While our heart is in San Francisco, CA, our presence and perspectives are global.

Background of Paul Dravis

Paul Dravis focuses on helping organizations and individuals address the changing dynamics of finance, technology and the global economy.

He has worked with organizations such as the World Bank, Microsoft Corp., SAP AG, Silicon Valley Bank, Government of Jordan, RCM Global Investors, Banc of America Securities, Robertson Stevens and Co. and others as a software developer, business strategist, investor and more.

His notable publications include “Bitcoin, Digital Currency and the Internet of Money: Innovations in Global Commerce”, “Open Source Software: Perspectives for Development” for the World Bank and “The World Wide Web: Globally Connected Plain and Simple” for JP Morgan.

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