The Complete Bitcoin User Experience

Mining, Exchanges, Wallets and Beyond

corporate insight

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Corporate Insight (CI) provides competitive intelligence and user experience research to the nation's leading financial institutions. For over 20 years, Corporate Insight has tracked new developments in the financial services industry through our *Monitor* research and custom consulting services. We are known for our detailed, objective research, unmatched expertise, and emphasis on the actual user experience. There are no assumptions in Corporate Insight's work – we use live accounts at the firms we track to benchmark their effectiveness and give our clients unparalleled competitive intelligence.

Corporate Insight is continuously tracking and identifying best practices in online asset management, banking and investing, insurance, annuities, mobile finance, active trading platforms, social media and other emerging areas. In the process, we have helped our clients -- which cover the entire spectrum of financial services -- to stay on top of industry trends and improve their competitive position.

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Corporate Insight is happy to discuss our research with the media. To set up a media interview with one of our analysts, please contact our PR firm, Intermarket Communications, at 212-888-6115 or corporateinsight@intermarket.com.
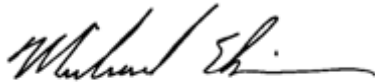
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WELCOME FROM CORPORATE INSIGHT

Corporate Insight is the leading provider of competitive intelligence and user experience research to the nation's top financial institutions. Our mission is to analyze and understand the evolving technological landscape across the financial services industry and identify the innovations that will shape the future.

Corporate Insight's analysts also strive to stay ahead of new digital innovations and trends beyond those in financial services. John Greenough, a Research Associate on CI's Banking and Credit Card team, has performed extensive research on the providers and digital platforms that drive the Bitcoin marketplace. John's research encompasses the overall Bitcoin user experience. He has opened accounts and personally interacted with leading Bitcoin exchanges, mining services and wallets giving his research a unique, first-hand perspective into the world's preeminent virtual currency.

The Complete Bitcoin User Experience: Mining, Exchanges, Wallets and Beyond provides a detailed analysis of how Bitcoins are created, traded and stored. The study includes reviews of the top websites and online services driving the Bitcoin marketplace including Slush's Pool, Blockchain.info and Coinbase among others. Bitcoin's uses, value, future outlook and virtual currency competitors are also discussed.

We hope you find this study valuable and would like to thank you for your interest.

Sincerely,

Michael Ellison, President
Corporate Insight, Inc.

INSIDE...

INTRODUCTION

On January 28, 2014, New York held the first state hearing on the future of Virtual Currencies in which Benjamin Lawsky, State Superintendent for the Department of Financial Services in New York, stated the future of Bitcoins is currently at its "tipping point." Many of the panelists at the hearing, including the famed Winklevoss twins, believed that this upcoming year will be "the year of Bitcoins," when consumers will begin to accept them as a legitimate form of currency for exchange.

What are Bitcoins?

Bitcoins are a form of virtual currency – a type of money that is purely digital and can be exchanged quickly across continents. Virtual currencies are being thought of as the next logical progression in money transfer, with Bitcoins being its leader. The peer-to-peer Bitcoin system has no central computer running it, and is instead distributed across a network of Bitcoin users. To connect the Bitcoin users, the system uses an open-sourced (publicly available) software that users run on their computers to solve complex mathematical problems in order to process/manage the Bitcoin transactions. In exchange for running the software, users are rewarded with Bitcoins through a process that is known as mining. Once the miner receives the Bitcoin, they are then free to trade it to others, spend it on goods and services, or store it within their digital wallet. Today, the price of one Bitcoin is roughly $700, yet that value highly fluctuates. Due to its high price, consumers often transact in fractions of a Bitcoin, such as 0.0001.

Who can use Bitcoins?

One of the chief benefits of the Bitcoin network is that does not have the same exclusivity and limitations that opening a bank account would pose to an individual. Instead, the network is available to anyone who has a computer or access to a Bitcoin ATM. Because of this, Bitcoins are considered the first "global currency"; with Bitcoin users able to trade across continents in a matter of seconds. Furthermore, the service allows anyone with access to any type of traditional currency (i.e. dollar, euro, yuan, etc.) to easily buy into the system and begin trading Bitcoins for goods or services.

Who Created Bitcoins?

Bitcoins were created by a cryptographer acting under the pseudonym Satoshi Nakamoto. His idea was to create a currency that can be exchanged across the globe in seconds, while simultaneously eliminating any costs those transactions would typically incur. Additionally, the system is designed so that it would be nearly impossible (or highly expensive) for one individual to control the Bitcoin network. To control the network, an individual or organization would need to control 51% of the mining process, which would require an incredibly massive amount of computing power. Furthermore, Nakamoto's system was built so that only a finite amount of Bitcoins (21 million) will ever be created, which eliminates the need for a government-run central bank due to the system not needing additional currency supply added or taken away. His system is often referred to as "digital gold"; no country can possibly control who finds the world's gold supply and no one can create more gold to be exchanged. However, unlike gold, Bitcoins can be moved in seconds across the globe.

Aren't Bitcoins Used for Purchasing Illegal Goods Online?

While Bitcoins were once used primarily for illegal goods, the market has shifted remarkably to legitimate forms of exchange. Consumers can use Bitcoins today to buy a wide variety of goods/services and merchants who accept them are growing rapidly. In their early days, Bitcoin users would mine using their at-home desktop computer and transact those currencies through the system, oftentimes not revealing their identity. In November of 2013, the government was able to shutdown Silk Road, a black market website in which customers could trade Bitcoins for illicit goods, such as heroine or guns, without revealing their identity and making it hard for law enforcement to track them down. That problem of illegal activity without a face to blame has somewhat been quelled as the Bitcoin network has grown to fit the demand from consumers. Now, average consumers who would like to access Bitcoin would most likely use a seamless online platform to do so, which require users to confirm their identity in a variety of ways. While the problem of illicit purchases paid for by Bitcoins to some extent remains, its shift to greater acceptance has made it more transparent.

Why is 2014 "The Year of Bitcoin"?

In 2014, we will see massive changes to the Bitcoin landscape, either through new regulations that may hinder its ability to grow, or through the expansion of businesses helping to build the Bitcoin ecosystem. Bitcoin advocates claim that we are currently witnessing an evolution of the payments industry with the rise of Bitcoin. Many compare it to when the Internet first began, and they raise a good point: When the internet became widely available to consumers, people were unsure of what it was or what it would be used for. Soon, services like A.O.L. began to run Internet service platforms, which helped build consumer use. Today, many businesses are based entirely off the Internet and it has become a part of our daily lives. The Bitcoin advocates claim that in 2014, it's possible that we'll see a virtual currency system from a major bank that advertises it securely, transfers funds and holds value. However, they believe these systems will quickly fail and fall back onto the original Bitcoin model, similar to the reversion of the internet Already, Bitcoin businesses have begun to form and are cultivating to build an ecosystem around the virtual currency. Contrary to the Bitcoin advocates, many believe that we are currently witnessing a bubble in which Bitcoins will inevitably collapse due to its lack of collateral and overall value. Furthermore, many economists forecast this collapse to occur relatively soon, possibly in 2014.

Bitcoin and Virtual Currency Basics

For a closer look at virtual currency fundamentals, check out Corporate Insight's **Bitcoin and Virtual Currency Basics whitepaper** released in January.
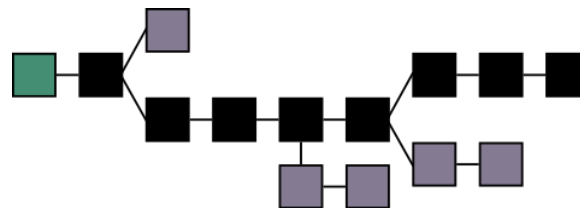
MINING A BITCOIN

The mining process is paramount for the success of Bitcoins. Through this process, miners dedicate their computing power to help manage transactions, transfer funds, keep the network secure, and ensure everyone in the system is synchronized.

The Blockchain, Block and Hash

The Bitcoin network is heavily reliant on the mining process of dedicating computing power to help process transactions within the Bitcoin peer-to-peer system. The system is centered on the **blockchain**, a public ledger that records all transactions that occur in the system. The blockchain is composed of **blocks**, which are constantly added to the system through the open sourced software created by Nakamoto. Each block contains the public record of any Bitcoin transactions that occurred during a roughly 10-minute timeframe. To mine for Bitcoins, users must run a mining software (based off of Nakamoto's original code) on their computer that enters them into the mining world to continually solve complex algorithms. The algorithms act to help harness the computing power in order to process transactions and create a record of the transaction that is stored in the block. Once a block is created, miners put it through a process in which they condense all of the transactional information in the block by applying a mathematical formula to its data.

The result of this is a much shorter sequence of numbers and letters known as a **hash** (the end process of mining the block). The hash acts as a digital seal for the block that is specific to the transactional information found within. Therefore, if someone retroactively altered a transaction within the block, the system would be able to identify that a change has been made because the hash would change. Additionally, each hash is connected to all of the other hashes that are within the system, meaning if one block is altered with, all hashes change and the system is instantly notified not to process the transaction.


The Blockchain   Source: Offtheblockchain.com

How does Mining Lead to the Creation of Bitcoins?

Once a block and subsequent hash has been created, and the block has been added to the blockchain, the system releases Bitcoins out to the miners. The catch is that only one miner receives the Bitcoins. That miner is the person who was able to successfully create the hash first and have dedicated their computing power to it. To better understand, consider the game Capture the Flag: Throughout the game, multiple players are attempting to capture a flag, but while they are doing that, they are also trying to capture members of the opposing team. Ultimately, it does not matter how many individuals they have captured, but it's the person/team who captures the flag that wins. In Bitcoin, miners are processing transactions (catching players), but ultimately the person who wins is the one who creates the hash (captures the flag).

How many Bitcoins are released?

Currently, when a hash is created, 25 Bitcoins are released to one of the miners. However, Nakamoto designed the system so that as the Bitcoin network grows, the system adjusts to make it more difficult to mine for each Bitcoin. It does so by making the algorithm exponentially more difficult based on the number of miners. Additionally, every four years, the number of Bitcoins released per block halves until the predetermined amount of 21 million Bitcoins are reached. For example, by 2017, one block will equal 12.5 Bitcoins; by 2021, each block releases 6.25, etc.

Number of Bitcoins Released Over Time
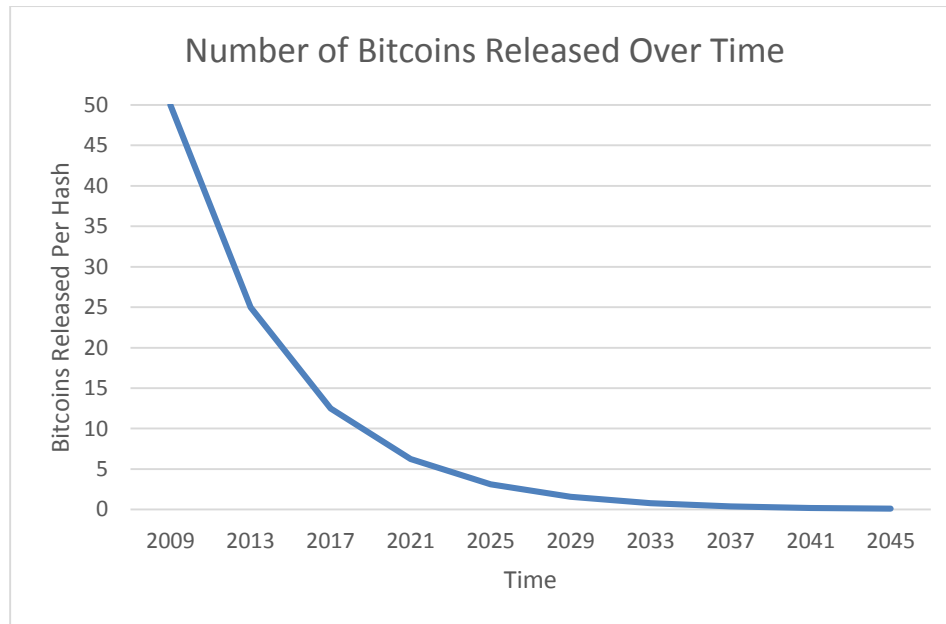
The Mine

Due to the increase in popularity of Bitcoins in the past year, there has been an influx of miners trying to create a hash and obtain the Bitcoins. This influx of miners has made it almost impossible for an average consumer to complete a hash. It is widely reported that the electric power required to mine an entire Bitcoin on an average computer would far outweigh its value. As a result, computers built specifically for mining Bitcoins (also referred to as ASIC miners) are being sold on the market for a retail value of upwards of $6,000[1]. Additionally, miners throughout the world have begun to build "super-mines" in which they obtain Bitcoins using computers with a high processing speed and low energy intake. Therefore, the average consumer must turn to **pooled mining** to obtain a Bitcoin.

Pooled mining is the process of combining computing power with other Bitcoin miners with the hope of receiving a share of the Bitcoins that the group as a whole mines for. To do so, miners sign up for one of the many online pooled mining services. Additionally, miners must download a mining software program to their computer that runs the mining process in combination with the pool.

To better understand the process, let's take a closer look at one of the top-pooled mining services, Slush's Pool, and its recommended software, Kiv's GUI Miner.

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[1] CoinTerra is the world's fastest Bitcoin processor and is being sold for $5,999.

Slush's Pool

One of the leading pooled mining services is **BitcoinCZ**, also known as **Slush's Pool**. Slush's Pool combines miners' computing power together to attempt to receive one of the sets of Bitcoins from the blockchain. If the group as a whole is successful in creating the hash, they divide the Bitcoins to the individuals who are involved in the hashing process by the amount of computing power they have dedicated. The following explains the step-by-step process of obtaining a fraction of a Bitcoin by dedicating computing power through Slush's Pool:

1. **Signing up for Slush's Pool is seamless** – Prospects are required to create a username and password, and link an email address to their account. Additionally, users must verify their email address through an activation email.
2. **Users must link a Bitcoin wallet to the account** – Because Slush's Pool only acts as a mining platform, users must have already set up a Bitcoin wallet to store the Bitcoin (process explained on page 9). To complete the setup, the user must provide the Bitcoin address of the wallet so Slush's Pool can transfer the shares they earn while mining. The Bitcoin address can be found within any online/mobile Bitcoin wallet.

<div align="center">

14i5NZgWVGnljkfRhVs1KHM7HHeWQNTnUH

Bitcoin Wallet Address Example

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3. **Miners download software to mine Bitcoins on computer** – To mine a Bitcoin, miners must download mining software onto their computer. Slush's Pool recommends to download Kiv's GUI Miner for beginning miners. The software is easily downloaded through a link to Mining.Bitcoin.cz.
4. **Mining requires nothing from the miner, except their computing power** – Once the GUI Miner software is downloaded, miners must select Slush's Pool as the server and login to the mining pool using their username and password. Once logged in, miners will select Start Mining to begin the mining process.

<div align="center">
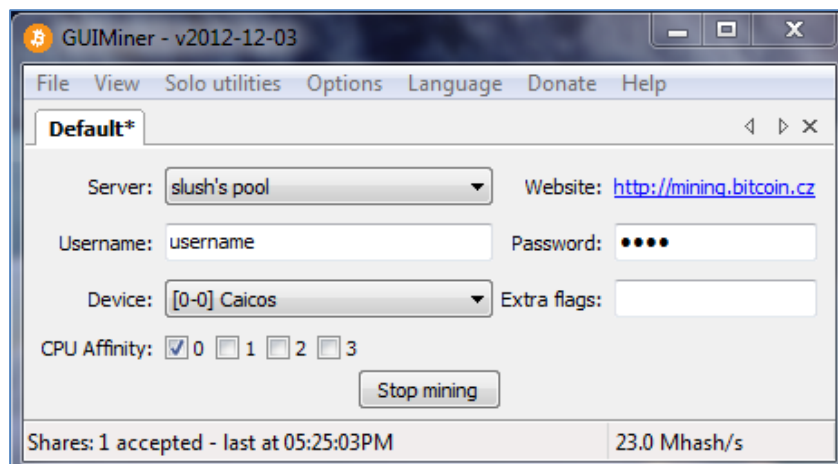
Kiv's GUI Mining Software

</div>

5. **Slush's Pool My Account page allows users to track and manage all mining** – The Slush's Pool My Account page acts as the main overview page. There, users edit their Bitcoin wallet address and track the amount of Bitcoins they have earned through mining. Additionally, miners may edit the threshold at which Slush's Pool will automatically send the Bitcoins earned to them. Finally, users may add multiple miners to one account through the workers menu located at the bottom of the page. This allows miners to combine multiple computers' mining power to be linked to one account.

Slush's Pool My Accounts Page

Final Thoughts on Mining

The Slush's Pool interface is easy to use and requires little from the Bitcoin miner. However, the pooled mining process is slow and reaps little rewards for a consumer running an average desktop. To have a successful mining device, Bitcoin users may purchase an ASIC miner that has been specifically built for mining. Bitcoin enthusiasts who do not wish to invest in a Bitcoin processor will benefit more in the Bitcoin ecosystem from trading/buying a Bitcoin through an online exchange than through mining efforts.

BITCOIN WALLET

In order to execute any Bitcoin transaction, a user must be registered to have a Bitcoin wallet. Bitcoin wallets hold cryptographic keys for users to access and spend their Bitcoins.

The Bitcoin

Another one of Nakamoto's designs for the system was to have it be a double-keyed system for a user to access their Bitcoin. The holder of the Bitcoin has a large sequence of numbers that acts as a private key, while the blockchain holds a separate publicly available key. In order to open the block to send the Bitcoin to another party, both keys are needed. The system is similar to a safety deposit box: A customer always holds a key to their safety deposit box, but the bank holds the key to the vault, which its employees can access. The mining system is like the bank in that where the miners have access to the vault key, only the owner of the Bitcoin can access the safety deposit box that holds the Bitcoin.

The Wallet

The Bitcoin wallet stores the private cryptographic key needed to access the Bitcoin within the Blockchain. In order to complete any action, such as the mining process, Bitcoin users must have already set up a Bitcoin wallet. The Bitcoin Wallet contains a cryptographic address, where traders can send Bitcoins, much like an email address. Bitcoin wallets are available in two forms: Hot Wallets and Cold Wallets.

1. **Hot Wallets** – These are wallets stored in an online server and often come in both online and mobile platforms. Examples of these include Coinbase and Blockchain. Because the Bitcoin information is stored within the two servers, the Bitcoin user runs the risk of a data breach on the site in which they lose their Bitcoins. However, these sites also provide more functionality and easier access to the Bitcoin Marketplace.

2. **Cold Wallets** – These are wallets that are directly stored on the user's computer. Examples of these include Bitcoin-QT and MultiBit. By storing Bitcoins in a cold wallet, users ensure that their private keys are safe from a possible data breach that may be found in other types of wallets. The cold wallets typically include a paper wallet containing a picture of a Bitcoin quick response (QR) code or are stored on a USB drive. Furthermore, Bitcoins were previously able to be "minted" into physical coins that would store the cryptographic keys necessary to access the Bitcoin within the Blockchain. Additionally, there has been a rise in the creation of "deep cold storage" vaults, where private encrypted keys to Bitcoins are stored on a large offline secured server.

The following examines both Blockchain and Coinbase, the two leading Bitcoin hot wallets that users may sign-up for online. While both services allow customers to store, send, and receive Bitcoins using the online platform, they strongly differ in additional features. Coinbase allows its users to buy and sell Bitcoins directly through their site. Blockchain tracks transactions and provides cryptographic codes to enable users to send/receive payments. Additionally, Blockchain has multiple partners that link its user to shop with Bitcoins, as well as gamble with Bitcoins.
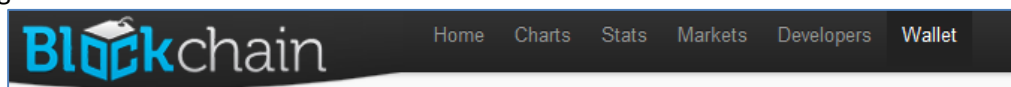
Blockchain

Blockchain.info is often recommended for new Bitcoin users due to its extensive partnerships with the Bitcoin marketplace and its easy set-up process. The service provides an easy-to-use interface in which users can view their transactions and send/receive Bitcoins. It is also available as a mobile application, however the IOS version is limited in accordance with Apple policies.[2] Additionally, the service provides an extensive network of Bitcoin partners, such as the Bitcoin Store, Bitcoin Options, and Gyft, a service enabling customers to buy gift cards using Bitcoins. Blockchain.info also enables users to quickly convert Bitcoins into cash through the partnered Cash Into Coins service. However, users wishing to buy/sell Bitcoins must use an outside Bitcoin exchange website, such as Mt. Gox. The following examines the multi-faceted interface of Blockchain.info:

1. **Blockchain requires customers to verify email address to sign up** – The sign-up process requires users to enter an email address, password, and Captcha. Once entered, customers must verify their account through a verification email. Once signed up, Blockchain prompts a lightbox containing a mnemonic and instructs users to write down the phrase. Interestingly, Blockchain does not provide users with the ability to recover a password if forgotten. To recover an account, the firm instructs clients to enter the mnemonic that was provided in the sign-up lightbox.
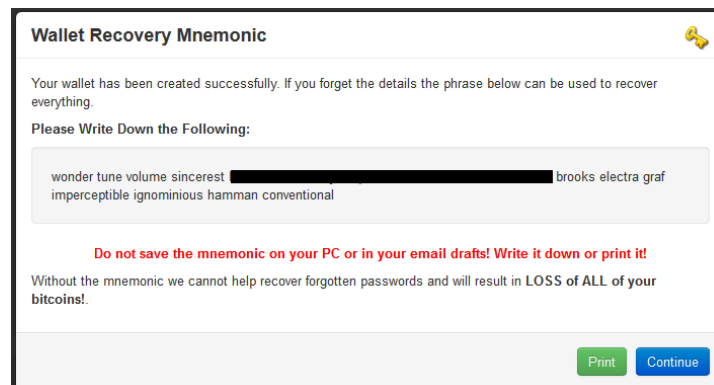
Wallet Recovery Mnemonic

2. **Blockchain Header** – The firm's header contains six links to various parts of the site including Home, Charts, Stats, Markets, Developers, and Wallet. While the Charts, Stats, and Markets pages provide excellent tools for tracking the current price and statistics of Bitcoins, the Wallet Home will be the page examined.

Blockchain Header

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[2] As of February 7, 2014, Apple has removed the Blockchain application from its App Store. The application is still available on the Android platform.

3. **Wallet Home** – The Wallet section of the site is divided into five intra-page tabs – Wallet Home, My Transactions, Send Money, Receive Money, and Import/Export. The Wallet Home acts as the private site homepage, providing detailed information regarding the user's current Bitcoin Balances and provides the Blockchain Wallet's QR code/Bitcoin Address. Furthermore, the page provides quicklinks to four of Blockchain's partnered sites – Cash Into Coins, Bitcoin Store, Bitcoin Options, and Gyft. While Cash Into Coins provides the service of easily converting Bitcoins back into dollars, the other three sites are part of the Bitcoin marketplace and provide spending options for customers.

Wallet Home Online Interface

4. **My Transactions** – The My Transactions intra-page tab lists the recent transactions on the account – very similar to a bank's account history page. The table is broken up into four columns – To/From, Date, Amount, and Balance. Additionally, users can filter and sort their past transactions via dropdown menus above the My Transactions table.

My Transactions Online Interface

5. **Send Money** – Blockchain enables users to easily send money through a variety of tools including Quick Send, Custom Send and via email or SMS message. If a Bitcoin user knows the wallet address of the receiver, they can send a Bitcoin using a seamless online interface. Additionally, users may be more likely to send payments in a peer-to-peer fashion while on-the-go, and may utilize the Send feature on the mobile platform.

Money Online and Mobile Interface

6. **Receive Money** – The Receive Money intra-page tab enables customers to access their wallet's public address, as well as add multiple wallet addresses connected to the same account. Customers may wish to add multiple wallets to their account to better manage their Bitcoin funds. Additionally, the Receive Money section provides customers with a linked QR code and can generate a QR code payment request for users to send to debtors. Additionally, the mobile application enables customers to request money and will send the generated QR code request to a G-Mail, Twitter, Facebook, or email account.


Receive Online and Money Mobile Interface

7. **Import/Export** – The final tab of the My Wallet section, Import/Export, is only recommended for Bitcoin users who have a good understanding of the network. This section allows clients to perform advanced tasks such as importing a Bitcoin private key (or address) into the wallet and scan QR codes from a paper wallet using a webcam. Customers may also import wallet addresses from cold wallet services such as Multibit or Vantigen.

Coinbase   ⬢ coinbase

Coinbase is one of the leading online Bitcoin wallet services. In December of this year, Coinbase received roughly $25 million in series B funding from Andreessen Horrowitz, making its total funding $31 million. The site is unique from many other online wallet services in that in addition to storing the Bitcoins private key, it allows users to buy/sell from the same platform (blockchain.info and others require users to go to exchanges like Mt. Gox). While many skeptics of "hot" wallets point out that Coinbase is subject to attacks from hackers attempting to steal the Bitcoins, the security that was found while testing was highly sophisticated. Despite the potential security breaches, Fred Ehrsam, co-founder of Coinbase, recently stated that the site is quickly reaching one million users. Interestingly, the Coinbase mobile platform is only available on the Android platform, as it was taken off the iTunes store for violating Apple policies. While this report is from the consumer perspective, Coinbase also enables merchants to easily set up and manage receiving Bitcoin payments on their website through the same online interface. The following profiles the consumer side of Coinbase.com:

1. **To utilize the Buy/Sell feature, customers must link a U.S. Bank account** – The initial setup of the Bitcoin account is fairly seamless. Customers must enter their email address, create a password, and then verify that email to gain access to the main interface. There, they have access to their Bitcoin wallet address and can send/receive Bitcoins. However, in order to use the Buy/Sell feature, customers must link a bank account to their Coinbase account and verify a phone number. In addition, once a phone has been added, customers gain access to have a two-factored authorization when logging in. In association with Authy, a security token mobile application, the user can enter in a unique code that is generated by the mobile application to act as a second form of identification.
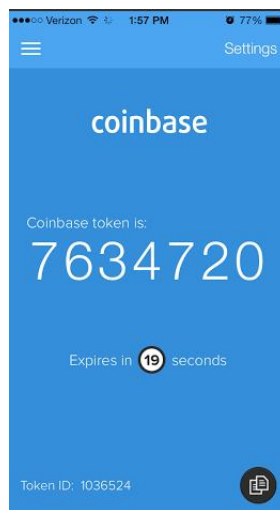
Authy Identification Secure Token

2. **Send/Request (Coinbase Homepage)** – The Coinbase online interface utilizes a left-side navigational menu. On the Send/Request page, which also acts as the private site homepage, customers can view past transactions that have been made by both the Send/Receive option and Coinbase's Buy/Sell platform. Through this page, users can Send/Request money through links at the top of the page. Each option requires the user to enter in the Bitcoin address for which they wish to send/request Bitcoins from, the amount of the transaction they wish to send, and add a personalized message at the bottom.

Send/Request Page (Homepage)

3. **Buy/Sell** – Coinbase enables users to buy and sell their Bitcoins directly through the online platform. To do so, the user must link their bank account to the site and verify their phone number. While this option is unique, one of its major setbacks is that it takes between 4-7 days to buy a Bitcoin using a bank account, due to a bank having to send an ACH transaction to Coinbase to fund the transaction. However, Coinbase also offers an Instant Buy option where customers can link a credit card and verify their identity to instantly process buy requests (charges will be made to the credit card). Additionally, selling a Bitcoin through the service usually takes 1-3 days to transfer the dollar amount received into the bank account.

Buy/Sell Page

4. **Recurring Payments** – Coinbase allows customers to set up recurring payments, in which they can Send, Request, Buy, and Sell Bitcoins. The tool acts similarly to the majority of banks' transfer tools and is incredibly useful for investors who may want to predict when to sell their Bitcoins.

Recurring Payment Tool

5. **Account Settings –** The Account Settings tab provides basic settings information. Here, customers can edit their basic email and password settings, alert settings, security settings, and manage their Bitcoin wallet address. Interestingly, Coinbase provides a promotion through this section where users can refer others and receive $5 worth of Bitcoin once they buy or sell $100 worth of Bitcoin.

Account Setting (Truncated)

Final Thoughts on Wallets

Online Bitcoin wallet platforms are very easy to use and allow Bitcoin enthusiasts to easily transition into the network. Comparatively, Blockchain.info and Coinbase are both very unique in what they can offer their customers, and prospective users must be aware of what they each provide. While both sites provide a very easy-to-use interface, Coinbase has the advantage of enabling customers to buy/sell Bitcoins directly and Blockchain.info integrates their customers with the Bitcoin ecosystem. Ultimately, both platforms may help to build the Bitcoin consumer-base.

TRADING A BITCOIN

The Exchanges

Exchanges are typically available through online platforms. However, there have been an increased number of in-person exchanges where Bitcoin users will meet up and trade Bitcoins for traditional currency, such as Satoshi Square in New York City. Furthermore, there are many services that enable customers to easily convert Bitcoins back into cash, such as the Cash Into Coins service.

The Anonymity of Exchanges

Interestingly, one of the major reasons that governments and regulators find problems with the Bitcoin network is due to the anonymity that these exchanges provide for trading Bitcoins back into cash. However, going through and testing the networks resulted in multiple identity checks performed by the sites. Furthermore, users must link a bank account to the system to buy Bitcoins and to receive the dollar value for Bitcoins sold. Interestingly, there are currently no major U.S.-based exchange platforms. The anonymity lies with the existence of services like Silk Road where users can buy and sell illegal goods using Bitcoin, which in turn makes it difficult to track the payment. Therefore the true anonymity lies in foreign government's inability to access information stored within the foreign exchanges. The following examines Mt. Gox, a Japanese-based exchange that is one of the largest Bitcoin exchanges in the world:

Mt. Gox is currently registered with FinCEN as a money transmitter, making it legal to be used in the U.S. Notably, the service requires users to verify their account information in order to either buy/cash out. The service offers real time charts of past transactions that have been made and users are able to convert Bitcoins into multiple forms of currency. Additionally, the Mt. Gox service also acts as a temporary wallet capable of holding Bitcoins and currency. Furthermore, the service also offers many capabilities commonly offered on bank and credit card private sites, such as live chat tools and a messaging center.

1. **To fully utilize the Mt. Gox service, customers must go through a laborious task of wiring money and linking a bank account, taking roughly 10 days** – The initial sign-up process for the Mt. Gox service is very easy and requires an email address, password, and to verify the existence of the email. However, in order for customers to fully utilize the buy/sell service that Bitcoin offers, they must verify their identity through a process that takes roughly 10 business days. The firm requires customers to send a copy of a form of government ID (i.e. passport, driver's license, etc.) and proof of residence (i.e. utility bill, tax return, etc.). Furthermore, Mt. Gox requires customers to link a bank account to be able to purchase Bitcoins through the exchange portion, or to cash out after the Bitcoins have been sold. The firm limits customers to withdrawing $1,000 per day that will be transferred via a bank transfer. Normal fees do apply when transferring the dollars through the ACH system.

2. **Trade** – Mt. Gox utilizes a top navigational menu, including nine links – Home, Trade, Merchant Tools, Security Center, Settings, FAQ, News, chat tool, and mobile website – and also offers links to the firm's Facebook and Google Plus fan pages. The firm's homepage is the primary place where the user would manage transactions that have occurred on Mt. Gox. The homepage utilizes a left-side navigational menu including four options – Trade, Funding Options, Account History, and Checkout Button. The Trade option acts as the landing page and provides customers with the ability to buy or sell Bitcoins through the service.

Private Site Trade Page

3. **Funding Options** – Mt. Gox enables customers to add funds in order to buy/sell Bitcoins through the Funding Options menu. There, users can access a wallet number associated with their Mt. Gox account to send Bitcoins from an external wallet, such as Blockchain.info, to be able to sell on the exchange. Furthermore, customers can add dollars in order to buy Bitcoins from the service. To add dollars, U.S. customers may primarily utilize a bank transfer, which can take a few days to fully process.

4. **Account History** – The Account History page provides a detailed view of past transactions that have occurred. The history is formatted in a table containing five sections – Date, Type, Status, Amount, and Balance. Additionally, customers can filter through their transactions and download up to three months of past transactions in a CSV (Excel) format.

Account History Page

5. **Checkout Button** – The final link in the homepage left-side navigation menu, Checkout Button, links the customer to the Merchant Tools that Mt. Gox offers its clients. There, customers can create a checkout button to put on their website to accept Bitcoins as payment.

Checkout Button
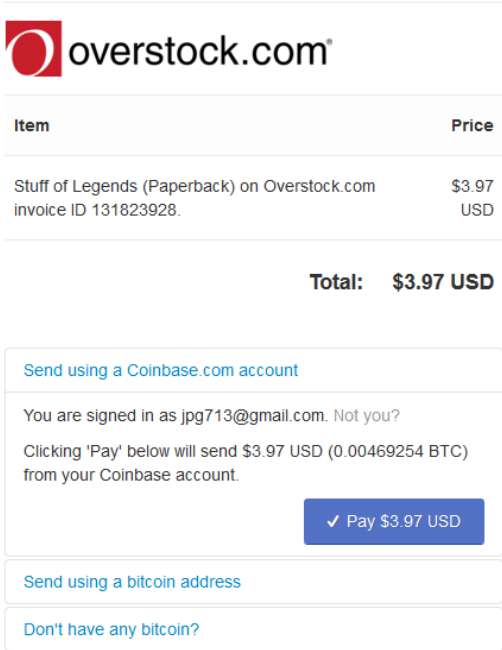
Final Thoughts on Exchanges

Online exchanges provide users with an excellent way to manage their Bitcoins. However, the account verification process for users to gain access to all of the features is cumbersome. Because the majority of exchanges are based overseas, the process of verifying the information can be tedious and can cause some skepticism for users to provide the information to a foreign site. The U.S. would greatly benefit from having their own major exchange system to increase Bitcoin traffic, while simultaneously ensuring the system is safe. Furthermore, almost every exchange has a different price that the Bitcoin is currently selling for, making it difficult to find where one can get the best deal on their Bitcoins. A major U.S.-based exchange would help to solidify an exchange rate for U.S. dollars which would both make it easier for investors to get the best price possible, while ensuring merchants are offering products for the amount of Bitcoins that the item for sale costs in a dollar amount.

THE BITCOIN MARKETPLACE

As more merchants begin to accept Bitcoins as a legitimate form of currency, the currency gains value because they can be traded for goods and services. Today, the majority of transactions that Bitcoins are used for are made online. However, more brick-and-mortar stores are beginning to accept them. Customers at a traditional brick-and-mortar store would use their mobile application or printed QR code wallet to pay using Bitcoin. Currently, the type of business that accepts Bitcoin is very broad, including online hobby shops, universities, law firms, and travel agencies. Small businesses are the majority of these merchants, but more large merchants, such as Overstock.com and TigerDirect, are beginning to accept Bitcoins. For a listing of the companies and stores that accept Bitcoins, visit SpendBitcoins.com. The following profiles the process of paying with a Bitcoin on Overstock.com:

Paying on Overstock.com using Bitcoins is seamless and is similar to checking out using the PayPal checkout button. Overstock, as indicated through their website, uses a Coinbase wallet system to help them accept transactions. Customers have the choice to either pay using a Coinbase account (using a one-click payment method) or by scanning overstocks wallet address QR code to send the Bitcoins.
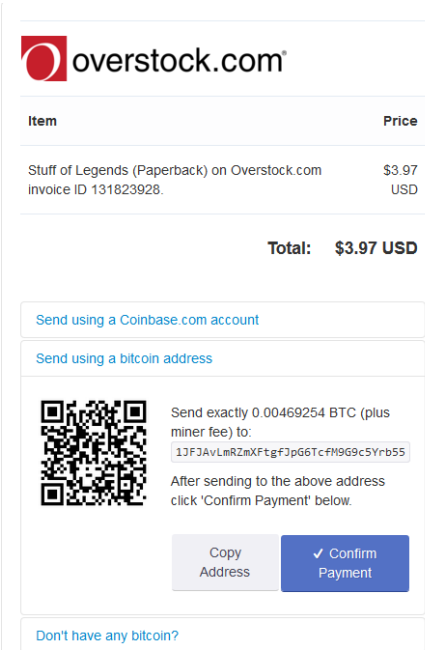
Paying Using Coinbase Account

Scanning QR Code to Pay

BITCOIN VALUE AND FUTURE OUTLOOK

In the start of 2012, the price of one Bitcoin was $4.75. In 2013, the price grew to $13.50. As of January 31, the price of one Bitcoin is $943.64. The colossal rise in price of Bitcoins has many contributing factors including increased merchant acceptance, de-facto government approval, and general knowledge/media presence informing consumers about their existence. Today, many venture capitalists and investors, including the famed Winklevoss twins, are betting big on the price of Bitcoins to exponentially rise through the introduction of new companies that accept Bitcoins and through purchasing large quantities of them. However today, the price of one Bitcoin is incredibly volatile, primarily due to reports of foreign government regulations being placed on them. In the months that Corporate Insight has been researching Bitcoins, its price has increased to over $1,200 and fallen to below $600. The following examines the true value of Bitcoins:
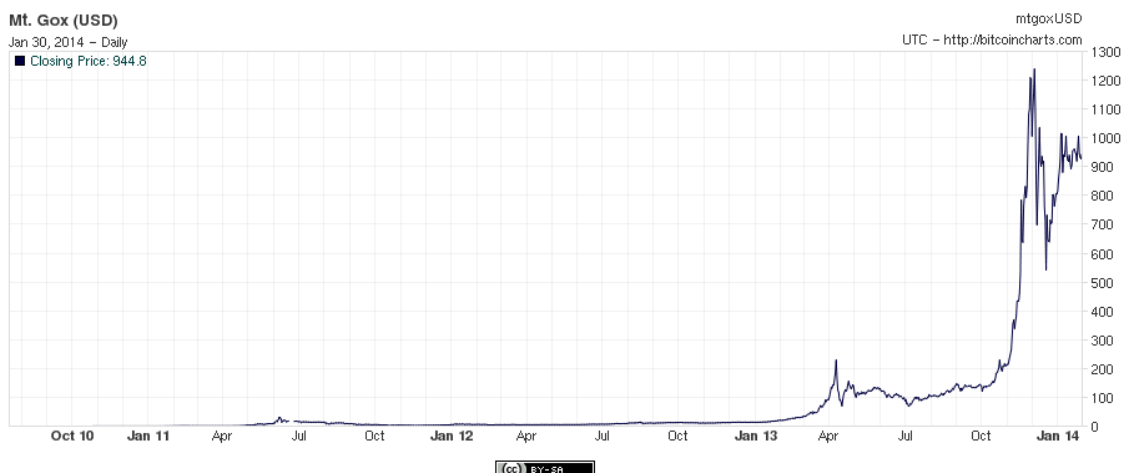
Price of a Bitcoin Since October 2010   Source: Bitcoincharts.com

Bitcoins vs. Gold

Many experts point to the value of Bitcoins being very similar to that of gold; the two are both "mined" for, there is a finite amount of each, and both can be traded for currency and used as a method of exchange. However, the two each hold a benefit over the other. Gold's advantage over Bitcoin is that it contains a stored value, meaning that gold can be converted into something useful (i.e. jewelry, wiring, etc.). Bitcoins do not hold any intrinsic value and cannot be held or touched. However, the Bitcoin's advantage over gold is that it can be easily transferred in a matter of seconds.

What Gives a Bitcoin Value?

While Bitcoins have no intrinsic value, their price remains relatively high due to a high demand from the general public. The Bitcoin's demand is a result of a variety of factors including: the increased number of merchants who accept Bitcoins, Bitcoins' low transactional cost, Bitcoins' ability to be used globally and increased media attention. However, the price falls primarily due to government regulations that are put into place and when arrests are made of people who have used the Bitcoin network to launder money.

Investing in Bitcoin

Many investors of Bitcoins believe that the Bitcoin system will be similar to the advent of the Internet that occurred in the 1990s. Currently, the primary way that one would invest in Bitcoins is by purchasing one and hoping that the price will rise and then they can sell it. However, other ways to invest, including the Winklevoss' ETF of virtual currencies, are beginning to emerge. If the popularity of Bitcoins continues to grow, it is highly possible that online investment platforms, including a Bloomberg machine, will try to integrate a system in which investors are able track the current price of a Bitcoin, similar to tracking the price of another security.

Possible Regulations After Attending the NYDFS Hearing on Bitcoins

On January 28, the New York Department of Financial Services (NYDFS) held a hearing on the future of virtual currencies, particularly Bitcoin, to determine what types of regulations should be placed. The panelists, primarily investors of Bitcoins, testified as to what they believe should be the appropriate legal framework for the Bitcoin ecosystem. While the NYDFS stated their concern that Bitcoin will be used for illicit activity, the panelists provided multiple suggestions for possible regulations:

1. **Regulate Only When Necessary –** In his opening statement, Jeremy Liew (Partner – Lightspeed Venture Partners) stated, "We must avoid the lazy temptation to conflate wrong-doing with new technology." This sentiment was echoed throughout the hearing as panelists testified that the Bitcoin community as whole has evolved significantly from the days of Silk Road into a system of law-abiding consumers using the currency in their everyday life. The panelists believed that increased regulations will hinder the ability for the Bitcoin community to grow.
2. **Bitcoin is the Next "Payment Internet" –** The panelists warned that the majority of Bitcoin startup companies are generally 2-4 people and do not have the necessary funds and resources to ensure compliance with regulations (unlike the many resources many large banks have). They stated that they need to find a way to grow the system while not encumbering the small companies with too many regulations.
3. **Create a Safe Harbor for Bitcoin Entrepreneurs –** Fred Wilson (Partner – Union Square Ventures) proposed one of the most salient points of the hearing when he stated his idea for the NYDFS to create a "safe harbor" for Bitcoin entrepreneurs. Although briefly explained, his idea included having small "garage" Bitcoin startups solely register once with the state and be admitted into a safe harbor. There, the Bitcoin entrepreneurial community could grow without the fear of being shut down for breaking compliance laws.

While it is unknown if Bitcoin will be legitimate in the long-run, its pending success is reliant on mass adoption amongst consumers. Currently, Bitcoin is at a tipping point in which over-regulation can stymie its growth. However, some regulation of Bitcoins can help to legitimize the currency by ensuring consumers' safety. The community is in its early stages for Bitcoin entrepreneurs to enter the market and build their businesses, which will legitimize the currency.

VIRTUAL CURRENCY COMPETITORS

A number of other virtual currencies are beginning to emerge as competitors to Bitcoin. These currencies are often referred to as "altcoins", or alternative coins. While Bitcoin currently has the highest price and market cap amongst its competitors, it is important to understand the various benefit offered by the leading "altcoins". The following table profiles a few of Bitcoin's top competitors:

Virtual Currency	What Makes it Unique?	Current Price (per coin)[3]*	Current Market Cap*
Bitcoin	Bitcoin is the predominant virtual currency that currently holds the highest value and market cap amongst its competitors. Often, other virtual currencies are created by changing the original Bitcoin open-sourced code, making Bitcoin the basis for most other virtual currencies.	$700.50	$8.67b
Litecoin	Litecoin is often referred to as the silver to the Bitcoin gold. Currently, miners are able to mine for them without using specially built computers. Additionally, there is a much higher amount of Litecoins that will be created than the amount of Bitcoins (84 million vs 21 million).	$18.35	$469.9m
Feathercoin	Feathercoin is a spinoff from Litecoin and can be thought of as the bronze of the virtual currency marketplace.	$0.30	$9.9m
Megacoin	The primary difference between Megacoin and Bitcoin is that as more miners for Megacoin begin to attempt to obtain Megacoins, the system does not automatically adjust to make it more difficult to mine for the Megacoins, resulting in a faster mining process for users to obtain them. A total of 42 million Megacoins can be mined for and all are expected to be mined for by 2079.	$0.49	$10.7m
Dogecoin	Dogecoin has been gaining popularity since the turn of the new year. Besides having a much larger amount of available coins, the currency features a popular Internet "meme" of a dog on the coin.	$0.0016	$77.5m
Ripple	Ripples currently holds the second highest market cap among virtual currencies ($1.9B vs Bitcoin's $9.2B). It has an incredibly high supply making the price of one Ripple being equivalent to roughly $0.02.	$0.017	$1.7b

As of 2/11/14

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[3] Prices and Market Cap according to Coinmarketcap.com

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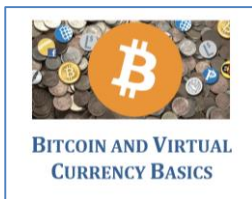
CI First Look: Bitcoin and Virtual Currency Basics Whitepaper

This whitepaper offers an introduction to the world of virtual currencies. We begin by looking back at the history of currency and point to successes, failures and trends in an effort to show what is required of any currency to be successful.

2014 Mobile Finance Trends and Innovations

The 2014 Mobile Finance study draws on our ongoing tracking of the industry as well as relevant developments outside of the financial services space. This study includes commentary on mobile developments, key takeaways for financial services firms and thoughts on what's next for mobile finance.

Tablet-Friendly Web Design: Best Practices for Financial Services

The study examines the tablet-friendly website features provided by four leading firms across financial services and provides recommendations for financial services firms building tablet-optimized websites.

Online Personal Financial Management: A Closer Look at Manilla and Mint

This slide deck analyzes two of the major players in the PFM space: Manilla and Mint. While different in terms of functionality and purpose, both PFMs offer user-friendly websites and apps that are popular with consumers and continue to grow.

Peer-to-Peer Lending: Examining the industry and the Borrower experience

This slide deck offers background on the P2P lending industry and takes a closer look at the borrower experience by profiling two leading firms in the space – Prosper and Lending Club. Five key takeaways and tips for P2P lenders are also highlighted.

Next-Generation Investing: Financial Startups and the Future of Financial Advice

CI tracks over 100 startups that cover a wide range of new ideas across financial advice and investing. The study, which is out now, focuses on each idea, compares them to what established financial institutions offer and examines the potential impact on the industry. Download the study preview featuring excerpts now!

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John Greenough is a Research Associate for Corporate Insight's Bank Monitor and Credit Card Monitor research services which analyze the online user experience and products offered by leading banks and credit card issuers.

One of John's passions is researching digital innovations in the financial services industry. In 2013, he released thought leadership pieces on the rapidly growing peer-to-peer lending industry and online personal financial management systems, reviewing top providers in each space.

The Complete Bitcoin User Experience: Mining, Exchanges, Wallets and Beyond represents the culmination of John's extensive research on Bitcoins and virtual currencies. He has also published a whitepaper on virtual currency fundamentals titled Bitcoin and Virtual Currency Basics.

John graduated from Trinity College in 2013.

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