

# BITCOINS BASICS 101



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# INTRODUCTION

## THE BIRTH AND EVOLUTION OF BITCOIN

The idea of Bitcoin was created by an anonymous programmer who goes by the name "Satoshi Nakamoto." The idea came to this person back in 2008, when the world economy was looking at a major recession. Satoshi first registered the [bitcoin.org](http://bitcoin.org) domain name then went on to release a paper about Bitcoin in October of 2008. They wanted to come up with a new currency that held onto the good points of previous currencies - divisibility, portability, durability, uniformity, quality and scarcity.

The paper Satoshi published in 2008 described a mathematical problem with 21 million possible solutions. This finite number of solutions fit well with his idea of making Bitcoin scarce - just like real money. Even though bitcoins had no value when they were first released, he hoped this would change over time as more people became involved. Satoshi registered the project for Bitcoin at [SourceForge.net](http://SourceForge.net) on November 9, 2008, deciding to keep the code open source. This helps by allowing others to view and study the code, even making their own contributions. Strict controls were put in place to make sure everyone is on the same page when it comes to the direction the software behind Bitcoin is moving.

By January 9, 2009, Bitcoin v0.1 was released and announced on a cryptography mailing list online. A lot of people noticed, but Bitcoin didn't really take off quickly. For over eight months, work on the code continued but the problem of bitcoins not having any value continued. Then, in October of 2009, exchange rates for bitcoins were published by New Liberty Standard. They listed the value at 1,309.03 BTC = \$1 USD. While many people laughed at the idea of starting a new currency, the fact that bitcoins now had value changed everything. The Bitcoin peer to peer network was up and running. And due to the fact that only a certain number of Bitcoins were created, this gave the new currency scarcity, which helped it tremendously.

On December 16, 2009, Bitcoin v0.2 was released to the world. The main users of Bitcoin at this time were computer programmers, but they actually began to trade BTC back and forth for money and services. By January of 2010, the first Bitcoin Exchange was established online, allowing people to buy, trade and sell BTC in a marketplace. By July of that year, [MtGox](http://MtGox), what would become one of the largest BTC marketplaces, was launched.

Over the next three years, Bitcoin would become even more popular, reaching many milestones along the way. From the first pizza bought with BTC to it finally reaching parity with the US dollar on February 9, 2011. Slashdot also took notice of Bitcoin in February of 2011, causing the [Bitcoin.org](http://Bitcoin.org) website to crash due to the number of people checking out the website. Over 5 million BTC had been created by this time, but it was still well under the 21 million to be created.

Many new marketplaces opened in 2011 and 2012 as more and more people began to find out about Bitcoin. While it had started as a tech curiosity for programmers, Bitcoin was slowly but surely attracting all types of people. And as the media coverage of Bitcoin continued, the number of people interested also rose considerably. On June 2, 2011, the exchange rate for bitcoins reached \$10 USD per BTC, an unheard of level up to that point. Some speculated that the value would hold around \$10, but this wasn't the case as bitcoins became even more popular - and valuable.

As the value of bitcoins increased, criminals also started to take interest. On March 1, 2012, a large theft of bitcoins occurred. Close to 50,000 BTC were pilfered after a security breach at the web host Linode. This furthered the idea that bitcoins had value and made them more valuable. Unfortunately, this wouldn't be the only theft of BTC during its lifetime, but it was the largest up to that point, and one that made a lot of people notice Bitcoin for the first time.

In September of 2012, the Bitcoin Foundation was set-up. A lot of Bitcoin conferences had taken place over the previous two years, but the Bitcoin Foundation was formed to standardize, protect and promote Bitcoin worldwide. This is now the organization that votes to make major decisions about the future of Bitcoin around the world. Keep reading as we take a look at how you can get involved with Bitcoin as well as what the future holds for cryptocurrency around the world.

# CHAPTER 1

## GENERAL INFORMATION YOU SHOULD KNOW ABOUT BITCOIN

### WHAT IS BITCOIN?

Bitcoin is called virtual currency, but a better term is cryptocurrency. Unlike physical money, there are no coins or paper money officially produced. No government entity decides how much and when to release it into the world. Bitcoins are created digitally by people as they solve complex math problems with their computers. In many senses, it is truly decentralized.

One of the interesting things about this virtual currency is that all transactions are stored and published publicly. The currency is traded via a vast peer-to-peer network that encompasses the entire globe. While there aren't a lot of rules regarding Bitcoin, there are some, and this helps with making bitcoins a genuine currency that works like "normal money."

### BITCOIN EXCLUSIVES

Next, we're going to take a look at some of the ways that Bitcoin is different than traditional currencies. It's these differences that make Bitcoin such a powerful possibility. One of the main differences is that Bitcoin is decentralized. No one person, corporation or government controls the Bitcoin network. This isn't the only difference, however, so let's take a look at some things that are exclusive to Bitcoin.

#### Bitcoin vs. Conventional currencies

##### 1. Bitcoin is Decentralized

Unlike traditional currency, which is controlled by a central authority - usually an arm of the government - Bitcoin is decentralized. Because it operates as a peer-to-peer network, all transactions and verification of transactions are done by various people in the network.

##### 2. Bitcoin is Virtual Currency

The other thing that sets Bitcoin apart from traditional currency is the fact that it's virtual. That is to say coins and paper money aren't produced to represent the value. Instead, all bitcoins exist in virtual space. This means you can't go to an ATM and withdraw physical money. Some people have created unofficial physical representations of bitcoins, but first and foremost, Bitcoin is virtual.

### 3. Bitcoin has Scarcity

Because only 21 million bitcoins will be created, BTC has scarcity, unlike traditional currency that can be printed when governments decide to print more. To spread out the creation of bitcoins being released into the world, the number that are created by "mining" will half every four years. This means that people will still be able to create them until the year 2140. At that time, no new bitcoins will be created and the existing stockpile will enjoy the benefits of scarcity - i.e. becoming more valuable.

### 5. Bitcoin transactions cannot be reversed

In order to preserve the block chain of all transactions in sequential order, Bitcoin transactions are not reversible. Additionally, a Bitcoin transaction can take ten minutes or more to confirm. This is different than other currencies that typically process transactions in seconds and also allow for reversing a charge to a credit or debit card.

### 6. Bitcoin is not Ubiquitous

Wherever you go in the world, you're going to run into local currencies. In most places, you'll be able to trade your country's money for bills of the country you're visiting. And no matter where you go in the world, you're going to be able to trade your money for goods and services. Bitcoin hasn't yet been embraced by the world at large. This may change in years to come as more businesses begin to accept Bitcoin for payment, but for now it's a difference that matters to a lot of people.

#### Good and Bad of Bitcoin

As you can see from the points above, Bitcoin has a lot of positives and negatives attached to it currently. Because it's decentralized and generally has low fees for transactions, many people are starting to take notice and get excited about this and other cryptocurrencies.

Another thing to note is that some people worry about who controls the Bitcoin network. The reality is that because it uses peer-to-peer technology, no one person or corporation can own the Bitcoin network. This may seem scary to some while it's revolutionary and exciting to others.

The need for all versions of Bitcoin software to be compatible and be able to communicate with each other is paramount to Bitcoin's success. Luckily, most people who are involved realize this and have worked together to improve the Bitcoin software and network considerably in just a few short years.

The fact that Bitcoin is different than anything else that was around when it first came out is both good and bad, but at the end of the day it makes Bitcoin unique and special. And this just might be what's able to help Bitcoin grow even more quickly around the world. This may turn out to be the financial system that brings the world together.

## HOW DOES BITCOIN WORK?

### The Basics You Need to Understand

Let's start by looking at the different things you need to get a cryptocurrency working. We'll start with the basics and then move into more specifics about what you'll need to get started.

- **The Transaction** - The first thing you need to think about with a virtual currency is the transaction - the actual exchange of value from one person to another. While this may sound simple, in many ways it can be easy to forge a transaction to try to cheat the system. With physical currency, transactions are controlled by banking institutions which verify that they're not forged and are unique.
- **A Serial Number** - To avoid people trying to forge transactions or reuse them with virtual currency, you need a way to tie a unique serial number to each person and each transaction as well. Bitcoin does this by using a private and public encrypted key. These hashes are used to make sure transactions aren't duplicated in the network and there's no way to cheat the system.
- **Goodbye Banks** - Currently, banks are in place to facilitate a financial transaction between two people. When Bitcoin was being set-up, it was realized that banks could be taken out of the picture entirely if a peer-to-peer network was created to verify the transactions between two entities. This decentralization of financial transactions is one of the biggest reasons so many smart people are getting excited about Bitcoin.
- **Bitcoin Mining** - Another piece is needed to make Bitcoin work. If it's too easy for transactions to be validated, people could program bots to flood the network with verifications, making it difficult to actually verify the transaction. To combat this, the idea is to make it computationally difficult to verify the transaction. This helps fight against the bad guys while at the same time offering a way to reward people who give up computing power to verify the transaction. The computational puzzle has to be difficult enough to make it impossible to hack while easy enough to still allow people to solve in a reasonable amount of time.

So, when you set-up a Bitcoin Wallet - aka a Bitcoin client - you will generate a public and private key that is unique to you. This is used to transfer bitcoins to you as well as allow you to transfer bitcoins to other people in the network.

After your Bitcoin Wallet is installed and running, you can create a Bitcoin Address if you want to receive BTC from someone else on the network. At the same time, you can use another Bitcoin address generated in order to pay for goods or services.

The next step is a transaction being generated when the actual swapping of BTC occurs between a buyer and seller. This is added to the block chain where others will verify the transaction (by solving the math problem) and then publish details of the transaction publicly.

## **HOW TO OBTAIN BITCOIN**

Understanding how Bitcoin works may be interesting to some, but you're probably wanting to know how you can acquire some bitcoins of your own. There are actually a few ways you can legally get bitcoins - no matter where you live in the world. As long as you have an Internet connection and the Bitcoin software installed, you're going to be able to begin using this virtual currency. The best news is that it's actually fairly easy to begin to build up your Bitcoin Wallet if you have a little spare time.

First, it should be noted that it's really difficult to purchase bitcoins with a credit card or PayPal account. This may seem odd at first, but if you think about it this makes sense. It's really easy to issue a chargeback on a credit card. If someone buys BTC with a credit card and then reverses the charge, it's really tough to prove to the credit card companies that the exchange really happened. Because of this, most major Bitcoin Exchanges do not allow you to purchase BTC with a credit card or PayPal account.

Okay, with that aside, let's dive in and look at the exact steps you're going to need to take in order to start amassing BTC of your own. It's important to remember that the value of one BTC is very volatile right now, so you probably don't want to invest everything you have in this virtual currency. At the same time, the popularity of Bitcoin is growing throughout the world and some people are already getting rich by building up large piles of bitcoins virtually via means and method we'll describe below.

### **Step One: Get a Bitcoin Wallet**

The very first thing you're going to need is a Bitcoin Wallet - aka a Bitcoin client. No matter what type of computer you're running, there's going to be an installer program to get you up and running in no time at all. Most people find it takes around 5 to 10 minutes to get a Bitcoin client installed and connected to the network.

Be sure you take your time to find a client you're comfortable with using. Most are very similar, but some have some extra bells and whistles that might make it easier for you to get started. The most popular option for Windows, Mac and Linux is currently MultiBit. Bitcoin Wallet for Android OS is also available.



Another option is to use a web based Bitcoin Wallet, although this isn't really recommended. While you may be able to find a service that offers a high level of security, it's not the same level you'd have if you install the software on your own computer where you have complete control. Coinbase is one of the more popular online Bitcoin wallets currently.

Whichever you choose, once it's installed the next step is easy. You'll generate a public and private key. This is your Bitcoin address that will allow people to send BTC to your account. After you have your Bitcoin Wallet setup, you have a few different options on how to accrue BTC in your wallet. We're going to go over these - one by one - next.

## Bitcoin Exchanges

Bitcoin exchanges weren't around when Bitcoin first came out, but they're now an integral part of how the whole Bitcoin ecosystem works. There are exchanges that include Bitcoin among other virtual currencies online as well as marketplaces that deal exclusively with BTC transactions.

It's interesting to note that some of these marketplaces will hold a balance for you - outside of your Bitcoin Wallet - in order to make it easier to conduct trades. Choosing the right Bitcoin Exchange is important if you want to stay safe and not risk losing your BTC balance due to a scam or technical problems.

Here's a look at the major factors you need to look at before choosing a Bitcoin Exchange.

- Security – The most important aspect you want to think about is security. If a Bitcoin Exchange is new to the Internet and is missing contact information, this is a good sign that they probably don't care too much about the security of your personal information. It's important to do your homework so that you can determine which Bitcoin Exchange website has the best track record when it comes to security. Luckily, if you spend any amount of time on the many Bitcoin forums and communities online, you'll see which exchanges have problems and which exchanges are recommended.
- Geography - While Bitcoin is a decentralized network that spreads around the globe, you still need to think about your physical location. For example, some Bitcoin Exchanges will not allow you to withdraw funds to a US bank account. It's a good idea to make sure whatever exchange you're thinking about using has a way for you to convert your BTC to your local currency easily and safely. In 2013, some people began complaining about the amount of time it took MtGox to transfer funds to the US, so it's a good idea to once again hit the forums and try to gauge public opinion about any exchange you're thinking of using.

Next, let's take a quick look at some of the major Bitcoin Exchanges currently operating. New ones are appearing all the time, but it's generally a safer bet working with one that has been around for a while and has managed to build up a track record of being reputable and honest.

- [CoinBase](#) – This is one of the most popular Bitcoin Exchanges at the moment. They offer the ability to transfer funds to US bank accounts. Having said that, if you live elsewhere in the world, you may not be happy about not being able to transfer funds to your local bank account.
- [MtGox](#) – At one time, MtGox was responsible for the majority of Bitcoin transactions in the world. This has changed recently as they've run into some legal problems in different countries around the world, but they're still a very popular Bitcoin Exchange that many people use on a daily basis.
- [BTC-E](#) – This website is based in an unknown city in Bulgaria, so you might be cautious about keeping any BTC here. The prices per BTC are generally a lot lower here, but this is because it takes a ridiculous amount of time to confirm a transaction. Still, it's an option you might look at depending on where you live currently.
- [Bitstamp](#) – This exchange is similar to Coinbase in a lot of ways. The main difference is that they do routinely work with people in countries other than the United States, making it easy to transfer BTC to foreign currencies. If you're looking for a truly global Bitcoin Exchange, this is a good place to start.
- [Cryptsy](#) – This isn't a pure Bitcoin Exchange. By that we mean that you can trade other cryptocurrencies as well. For example, you can exchange your BTC for LTC (LiteCoins) and vice versa. If your virtual currency investments go beyond Bitcoin, you'll want to check out Cryptsy.
- [BTER](#) – With slow transaction speeds and limits on the size of transactions, this isn't really recommended, but we thought they deserved a spot on the list because they do serve the needs of some people who use Bitcoin.
- [BTC-China](#) – One of the fastest growing Bitcoin exchanges – according to [Wired magazine](#) – is BTC-China, which has really ramped up their efforts recently. By some accounts, they've overtaken MtGox as the place where most Bitcoin transactions take place on a daily basis.

## Face to Face / Over the Counter Trades

Even though it's a virtual currency, you can still arrange to meet someone in person and conduct a transaction with them. Having said that, finding such people might be difficult. This is where the [LocalBitcoins.com](#) website comes into the picture.

[LocalBitcoins](#) is the main website people use to find people who want to meet face to face to exchange bitcoins for cash or vice versa. The website even allows them to negotiate prices beforehand. Add in an escrow service, and it's one of the easiest and safest places to find someone to exchange bitcoins with locally.

No matter the value of the money being exchanged, it's important for you to stay safe. To do this, it's a good idea to always arrange to meet in a public place surrounded by a lot of people. Never agree to go to someone's home, apartment, or a field on the outside of town! In all seriousness, use your common sense when setting up a face to face Bitcoin transaction.

Even though you're meeting in the real world, you're still going to need access to your Bitcoin Wallet. Once you have the cash, use the other person's Bitcoin Address to send them the predetermined amount of bitcoins. The good news is that you can use a laptop, tablet or even your smartphone to do this wherever you are as long as you have a WiFi connection.

In addition to one on one meetings, many people around the world also have Bitcoin groups that meet in public places in order to exchange Bitcoin for cash and vice versa. Websites like [Meetup.com](http://Meetup.com) routinely have Bitcoin groups that meet in real life. In some big cities, you may find multiple groups meeting on different days of the month. Additionally, you may find so called "Satoshi Squares" or Bitcoin markets set-up in public places.

It should be noted that in most cases you're going to pay a transaction fee of 5% to 10% (or more) to the seller in exchange for the privacy and immediacy. This is too much for some people, but for others it's just a cost of doing business. Just be sure the local police don't think you're exchanging money for illicit substances!

## Bitcoin Mining

In the very early days of Bitcoin, this was a reasonable way for an average, everyday person with a little computer knowledge to generate income. However, as more people began to use Bitcoin and realized the potential for making money, large groups of people (including some corporations) were set-up, effectively locking out individuals who want to mine for bitcoins using a home computer.

Here's a look at what you need to get started with Bitcoin Mining.

- **Bitcoin Mining Software** - While early Bitcoin Clients included the ability to mine for bitcoins, this stopped as dedicated software for Bitcoin Mining was created and released. You'll still need a Bitcoin Wallet to store the bitcoins you collect via mining, but the actual mining software will be separate from the main Bitcoin Client.
- **Bitcoin Mining Hardware** - As Bitcoin became more popular, people realized that graphics cards in computers were great for doing the complex math needed for Bitcoin mining. Soon, dedicated hardware was created just for mining bitcoins. Software is still needed to run them, but these devices - known as ASICs after the type of processor they use - are almost a necessity to have enough computing power to be able to successfully mine bitcoins.

Another thing to think about is joining a pool or what's known as a Bitcoin Guild. This is a group of people who pool their computing power together in order to solve blocks more quickly. This makes it easier for smaller players (individuals) to be able to compete. Once a block is solved, the bounty is split up between members of the group based on the amount of processing power they contributed to mining the bitcoins.

Additionally, some enterprising individuals have set-up companies with entire data centers setup with multiple computers in order to mine bitcoins on a very large scale. The pure computing power available to them makes it difficult for individuals to compete these days. This is one reason Bitcoin Guilds are becoming so popular. Lone Bitcoin miners are rarely able to compete with the large companies unless they band together.

### **Bitcoin investment trust**

Another option for generating bitcoins for yourself is to go with [Bitcoin Investment Trust](#), which invests in bitcoins only. Using a special protocol to store the bitcoins safely for shareholders, you can make BTC much like you would make money by investing in a hedge fund. The advantage to this is that you don't have to hold onto a large quantity of bitcoins by yourself. The BIT takes care of all the security and other details. You won't get as much hands-on interaction with Bitcoin this way, but this is fine for some people as long as they're making money.

### **Bitcoin ATMs**

A Bitcoin ATM is different than a normal bank's ATM. Basically, you are performing a one-to-one transaction but you're doing it with a machine rather than a person. After depositing your cash into the machine, a slip of paper is printed with everything you need to load the bitcoins into your Bitcoin Wallet. These are very rare currently, but as Bitcoin gains more prominence and begins to be used more, there's a very good chance more of them are going to be seen all over the world. Perhaps someday they may even dispense other currencies using your BTC balance.

### **Acquiring Bitcoins Not Super Easy**

While acquiring bitcoins is not super simple - press a button and make money - this is part of what makes the cryptocurrency so valuable. Having said that, Bitcoin is still relatively new. The number of options for getting bitcoins is increasing all the time. Plenty of incentives exist for enterprising people to come up with new and convenient ways for people to use Bitcoin.

Some ideas floating around on the Internet include Bitcoin gift cards which would work like traditional gift cards but be filled with BTC instead of other currencies. Other ideas include physical bitcoins and many others. One of the great things about Bitcoin is that it's constantly evolving and becoming better thanks to the community of people around the world.

## HOW TO MINE BITCOINS

Next, we're going to take a more indepth look at how to mine bitcoins, including some technical information. As you know, Bitcoin mining refers to confirming existing Bitcoin transactions (blocks) by figuring out complex math problems. Once confirmed, they become a permanent part of what's known as the block chain - a record of every single Bitcoin transaction since it was first started.

Because all the transactions are public - and in chronological order - it's easier to protect the neutrality of the network. At all times, different computers in the network have to agree on the state of the overall system. Doing it this way also makes sure that previous blocks can't be modified. If they were, blocks connected to them would also be invalidated. Other rules exist - coded into the software - to make sure that everything works as it should.

Basically, Bitcoin mining is like a lottery in that it prevents any single person from adding consecutive blocks or from replacing sections of the block chain in order to "roll back" their own transactions for one reason or another. It's this competitive side of Bitcoin which makes it so addictive for some people as they try to gobble up all the new bitcoins as they are created when people conduct transactions.

If you ask most people, Bitcoin Mining is one of the more difficult aspects of Bitcoin for people to understand. And yet it's crucial to the whole system because it is the only way that new bitcoins are created. Knowing how a currency is created - and understanding the process - is important in helping people trust Bitcoin as a valid currency. To help with this, we're going to go over some of the main concepts of Bitcoin Mining that you should know about.

### Hash

The hash is really hard to understand, but at its core it's the result of a complex math problem. While it's relatively easy to reproduce, it's impossible to reverse once completed. It's also difficult to predict the answer.

### Block

A block is a series of transactions placed together. Every Bitcoin Block is linked with the one before it in the chain as well as the one that will come after it. The further back a block is in the chain, the more difficult it is for a hacker to corrupt or change the data. Blocks connect with each other to form what is known as the Block Chain - the backbone of the Bitcoin system.

## Difficulty

When trying to mine bitcoins, you're going to get a difficulty factor. This number tells you how hard it will be to find a winning hash and collect your bounty of bitcoins. On average, around six blocks should be solved every hour. Adding a random difficulty factor to this ensures that most blocks take around ten minutes to solve.

Because new people are joining the network and others are leaving all the time, the difficulty factor is used to ensure that each block takes approximately ten minutes to solve - no matter how many people are connected to the Bitcoin network at the time. So, the more nodes in the Bitcoin network, the harder it is going to be to compute the hash and clear the block. Still, it comes down to luck as to which node in the network actually finds the winning solution first.

## Bitcoin Rewards

Another interesting aspect of the Bitcoin network is that the reward for solving a block is controlled very closely. Every so often, the reward is halved so that less bitcoins are put into circulation. While the number started high in the early days of Bitcoin, it currently stands at 25 BTC per block in early 2014.

In the year 2140, the halving will stop with bitcoin rewards being at zero finally. Exactly 21 million bitcoins will be in circulation at that time. At this point, the reward for solving the hash and clearing the block will be a part of the transaction fee - which will be a lot less than the current bounty of 25 BTC.

In the very early days of Bitcoin, people were able to use their personal computers to mine for bitcoins without any problems. However, as more people started getting involved and they began throwing more and more computing power at the problem, Bitcoin Mining has become more of a team sport, with lone wolves unable to compete with all the others mining bitcoins.

Today, application specific integrated circuit (ASIC) processors are custom built just for Bitcoin mining. The other main cost, of course, is electricity to keep the computer running. Most of the electricity is usually spent keeping the computer hardware cool as it crunches the numbers trying to solve hashes.

In the beginning a single person could compete if they had a really fast computer with lots of RAM and a great graphics card, but those days are long gone. As large companies have formed and set-up dedicated server farms to mine bitcoins, the individual has very little chance of being able to compete.

This is why Bitcoin groups pooling resources have become so popular. Different computers are pooled together to work on solving a block. If someone in the group comes up with the answer, the reward is split among everyone in the group depending on how much processing power they supplied.

# CHAPTER TWO

## BITCOIN AND THE ECONOMY

Unlike the financial systems in place around the world, bitcoins are created at a fixed rate - one that was decided on when Bitcoin first launched. Because of this, Bitcoin mining is very competitive. The scarcity of bitcoins is gradually making them more and more valuable. With a finite number going to be available, their value is likely to increase over time.

As more people join the Bitcoin network, it becomes more and more difficult to make a profit with Bitcoin mining - unless you throw a lot of money at the problem and buy expensive hardware that you can dedicate just to Bitcoin mining. At the same time, because Bitcoin is a decentralized system, no one person is able to control or manipulate Bitcoin in order to line their own pockets with money.

Add to that the fact that bitcoins are created at a predictable and decreasing rate over time, and it's easy to see why so many people are excited about the possibility of making a fortune by mining bitcoins or speculating on their value over time. When 21 million bitcoins are produced, it's going to likely increase their value even more - if Bitcoin is still around in 2140.

### Why Bitcoin Has Gained Traction Over Time

For some, it's hard to imagine one person's idea becoming reality - something that has gained popularity all over the world. On the other hand, the Internet has enabled many similar success stories to happen. Still, there are reasons that Bitcoin has managed to gain traction over time. We're going to go over some of the main ones so that you have a better idea of how it's spread so far so fast.

- **It's Useful** - First, you have to look at the fact that Bitcoin is useful. It manages to fulfill a need for many people around the world.
- **Decentralized** - The fact that the Bitcoin network is not controlled by a single person or corporation has helped it gain favor with the world's population.
- **It's Easy** - Another reason Bitcoin has become so popular is that it's relatively easy to set-up and understand. Within 5 minutes most people can have a Bitcoin Wallet installed and connected to the network.
- **Convenient** - Additionally, once you have your Bitcoin Client setup and connected to the network, it's amazingly convenient to transfer money.
- **Barriers Removed** - One of the biggest reasons that Bitcoin has caught on and become insanely popular is that it works to remove barriers that cause people problems.



As you can see, Bitcoin is popular for many of the same reasons physical currency is popular around the world. It makes modern life possible and a little bit easier.

## What is The Value Of Bitcoin

We're now going to take a look at the true value of bitcoins. All that is needed for currency to hold value is trust in the currency and people using it. This is one of the main reasons that bitcoins now have value. It has been accepted as being valuable by a large group of people, both buyers and merchants. A lot of people around the world now accept Bitcoin as a means of payment.

Additionally, the fact that Bitcoin has spawned so many startup companies around the world is testament to bitcoins having value. Having said that, Bitcoin is like any other currency. That is to say that their value is measured in part by what people believe they're worth. The single biggest thing to remember is that if they weren't accepted as payment they would have no intrinsic value.

In the past, many currencies were backed by physical assets - typically gold and other precious metals. Because they're rare around the heavier elements have value. This value was passed on to bits of paper and metal coins to make it easier to transfer wealth from one person to another. Over time, a lot of governments switched to fiat currency, which is NOT backed by precious metals. This is why countries can simply print money to stimulate the income. However, doing so causes inflation and the money ends up being worthless.

Because Bitcoin is not backed by physical assets and its creation is decentralized, its value relies on the confidence people have in the virtual cryptocurrency. At first bitcoins had no value at all. Then, gradually, as more people became involved and began to give them value, their overall value increased. It's important to note that the value of a Bitcoin will vary from exchange to exchange, showing that the value really is what people are willing to spend on it.

If you know anything about the history of finance, you've probably heard the story of the Dutch Tulip Market. In the country, tulip bulbs were rare and had value. Over time, they became more and more valuable as the market was worked into a frenzy. The price skyrocketed until people started getting scared and sold all of their tulips. As this happened, the prices plummeted until they were back to "normal" for the most part.

Unfortunately, the same thing could conceivably happen with the value of a Bitcoin. During 2012 and 2013, the value of 1 BTC rose quite a bit, with each Bitcoin being worth several hundred dollars. The value drops occasionally, but it's still trending upward, becoming more and more valuable as time passes and the 21 million Bitcoin limit nears.

Let's take a look at some of the main reasons that the value of a Bitcoin has been increasing and will likely continue to increase in value in the years ahead.

1. Major Investors - One of the main things that has helped the value of bitcoins to increase so much recently is the fact that a lot of "deep pocket" investors have begun to take notice of Bitcoin and its potential for making a profit. Some companies have made very large purchases of bitcoins, betting that they're going to increase in value. This only leads to Bitcoin becoming even more popular and valuable, of course.
2. BTC China - Another thing to look at is the birth and rise of BTC China - now the largest Bitcoin Exchange in the world. As many Chinese try to find ways to safely invest their money, Bitcoin has become a way to get around regulations in that country. This surge in popularity led to BTC China being set up. After launching, it quickly became responsible for most of the Bitcoin transactions worldwide. With a population well over 1 billion people, the acceptance of Bitcoin in this market is a good sign that it's going to continue increasing in value.
3. Startups - Also, the fact that a lot of startups are being created to fulfill needs in the Bitcoin market is further proof that not only are bitcoins going to be around, a lot of smart people are betting that they're going to increase in value. While tens of millions of dollars have been invested in Bitcoin startups over the last couple years, this number is expected to increase as even more people try to monetize the growing Bitcoin market.
4. New Exchanges - When you look at the number of Bitcoin Exchanges that are starting up around the world, it's yet another sign that Bitcoin is here to stay. Some websites count the current total of Bitcoin Marketplaces online to around fifty currently in early 2014, with new ones popping up all the time. This growth shows that many people are betting that Bitcoin is going to be around for years to come.
5. Mining Difficulty - With so much competition and computing power going into Bitcoin mining these days, it's become nearly impossible for a single individual to mine enough bitcoins to break even, let alone make a profit. This, of course, drives the value of bitcoins up even more because it is so difficult to create new bitcoins by solving blocks and adding them to the block chain.
6. Limited Government Involvement - This is likely to change in the coming years, but for now the lack of government regulations have really allowed Bitcoin to flourish and grow in many parts of the world. This is already changing as governments begin to take Bitcoin seriously. The fact that they're starting to do this also shows that Bitcoin has broken some barrier and become a reality that will be around for years to come, increasing in value all the time.
7. Payment Acceptance - As more and more businesses - some major ones even - begin to accept BTC as payment for goods and service, this is only going to help cement the cryptocurrency and increase its value over time.

8. Media Attention - Whether it's the local newspaper, a national TV network or on the radio, the mainstream media is currently fascinated with everything Bitcoin. They may think of it as "Magic Internet Money," but as more join the Bitcoin community, the coverage is going to change. Someday you might find television shows (and entire networks) dedicated to Bitcoin prices and markets.
9. The Internet - Additionally, beyond the mainstream media, the Internet and the world wide web have made it possible for knowledge about Bitcoin to spread far and wide quickly. This has led to the virtual currency becoming more valuable as well. From bloggers to forums dedicated to Bitcoin popping up, the Internet is abuzz with talk of Bitcoin, which helps bring more people into the network, driving the value of a Bitcoin up even more.

Looking at the list above, it's easy to see why there's been such an increase in the value of bitcoins in the last couple years. What's really amazing is that Bitcoin is still at the very early stages of its life as a worldwide currency. This means there are sure to be a lot of changes - some probably dramatic - in the months and years ahead as Bitcoin matures and gains more acceptance around the world.

### Supply, Demand, and Bitcoin

As you know, the value of a Bitcoin is subject to change quite frequently - both up and down. It's important to note that there is always a fixed number of bitcoins available on the market. As long as new bitcoins are being added to the network via Bitcoin Mining, this number will change, but at some point, BTC 21 million will be reached and there will be no more new bitcoins produced via mining.

However, Bitcoin is a very speculative market. That is, there's no easy way to predict whether prices are going to rise or fall at any one moment. Because they're produced at a steady rate, it's not possible to suddenly start producing more as the value rises, slowing the growth of the value. This doesn't really happen, though, because bitcoins are created at a steady rate - with one block being solved every ten minutes.

What currently happens a lot of the time is that as the perceived value of 1 BTC rises, people become more interested in purchasing them, which drives the value up even more. As seen with the tulip market in the past, this can't go on forever unchecked, but Bitcoin is a bit different than tulips in that there is a finite and knowable amount of them that will be in circulation - 21 million to be exact.

Even though the traditional model of supply and demand doesn't fit exactly with Bitcoin because it's such a speculative market, some of the lessons do still apply. For example, as mentioned, as more people snatch up bitcoins, the higher their value rises. That is, with more demand, the price will go up. Beyond that, it's going to be interesting to see younger generations begin to study the Bitcoin markets to come up with different ways to look at financial activity.

## Bitcoin Deflation And Economic Activity

While the future of Bitcoin does indeed look bright, there are some economists who are thinking ahead and say that the cryptocurrency may have a problem in the future due to deflation. The amount of bitcoins that will be produced is fixed at 21 million. This supply of BTC will be used to buy more and more goods and services while it could end up in deflation on a major scale.

For example, say you come up with a product or service that costs you 1 BTC to produce. You hope to sell it for 2.5 BTC to make a hefty profit. You go to work setting things up, but when you launch to market, your product or service is only worth .5 BTC due to deflation that has happened while you were producing your product or setting up your service to sell online - and this could be a major stumbling block.

As this happens, people are going to be more apt to hold onto their bitcoins because they will become more valuable. However, if no one is using their bitcoins for transactions, the whole system could collapse eventually. And there's a good chance people are NOT going to spend if they know that waiting a little while will give them more buying power per BTC. It's this shrinking price versus cost margin that could really hurt Bitcoin.

During deflationary periods, there's no good reason to keep investing current BTC in producing products or developing services to sell. This is going to affect both the people producing goods and services as well as consumers - who are going to want to wait a little bit until their money can buy more. This is just common sense. However, it may end up in what's known as a deflationary spiral - something that's difficult to escape.

This is not happening right now because people are using USD or other currencies to create products or come up with services and then selling them by collecting BTC in return. This is going to change, however, as Bitcoin becomes more popular around the world. At some point, people are going to start trying to use BTC to invest in creating products and services and it's at this time that problems may begin appearing for the Bitcoin universe.

The way to avoid this would be to keep other currency systems in place. This may - at some point - become difficult if not impossible to do if Bitcoin continues to increase in popularity around the world. As more people and businesses begin to rely heavily on Bitcoin, there's a chance that the deflationary spiral may begin, causing a lot of damage to people - and the whole system - along the way.

While this is hypothetical and not a lot of economists have begun to study the Bitcoin market, it's still a possibility that may happen. And this makes it an important issue that should be discussed publicly before the problem actually occurs. The problem is that there isn't enough interest in Bitcoin ... yet. This is changing, however, and there's a good chance other economists and financial wizards will begin to look at the Bitcoin system in earnest. And this is a good thing on many different levels.

### **Digital Currency's Future**

Speaking of the future of Bitcoin - and other digital currencies - it's going to become more important to study different aspects of Bitcoin and other virtual currencies so that big problems do not arise and take everyone by surprise. A crash of the Bitcoin market is a possibility, and with billions of dollars at stake, it could have far reaching effects around the world.

When you look at the global market, you can also see why Bitcoin and other cryptocurrencies are becoming more popular all the time. In many countries - from South America to Southeast Asia - many billions of people do not have access to traditional credit systems or even digital payments. Bitcoin may be able to open up a lot of possibilities for these people in the third world.

And if that does happen, there's a good chance that Bitcoin will take off and begin to grow even more quickly as people begin to use it rather than relying on traditional financial institutions - which usually aren't benefiting the people on the bottom of the societal ladder. The benefits of Bitcoin to people around the world is really staggering when you step back and think about it for a moment or two.

For example, with Bitcoin it's much easier to make international payments without risk of credit card fraud - something that's becoming more and more of a problem these days. Quite a few countries don't even accept credit card payments for one reason or another, which isolates quite a few societies around the planet. That isn't good in the grand scheme of things, which is why Bitcoin is being heralded as a lifesaver for some.

Another way that Bitcoin may spread quickly in the future is as a means for international workers to send money back to their families without huge transaction fees. Companies like Western Union (and even PayPal) may find that they no longer have enough business to keep operating if Bitcoin really takes off and people begin using it to send money to their families in another country.

Why should the people give large corporations billions of dollars per year in transaction fees when Bitcoin can do the same for free? This is actually one of the reasons that Bitcoin may have problems in the future as it grows. Large banks and other companies are likely to cry foul as they lose billions in revenue to Bitcoin. And if they do start to complain, there's a good chance that governments and regulatory agencies are going to take notice and try to appease them by shutting down Bitcoin or at least trying to slow it down.

At the same time, a lot of people are going to be on the side of Bitcoin. What will senators and other politicians say when their constituents start talking to them about Bitcoin and other virtual currencies? They're going to have to listen if enough people stand up and start taking them to task for trying to take Bitcoin out of the picture. This is why Bitcoin's future is looking bright - the people.

## The Growth of Bitcoin

We looked at the growth of virtual currencies in general in the last section, so let's take a specific look at how Bitcoin may grow and evolve over the next few years - and decades. In many ways, the future of Bitcoin looks bright because it's now growing in popularity at such a fast rate. There are a lot of reasons for this exceptional growth.

For one thing, Bitcoin is loved by people who try the decentralized currency because they see it as a way to make the world a better place - especially for the disenfranchised people who are too often ignored by current financial systems in place. In fact, some would say that the current economy does a lot to keep poor people poor while making the rich even richer. This ever widening gap between the haves and have-nots is dangerous.

If you look at Google Trends, it's easy to see that the topic of Bitcoin has been experiencing a lot of growth and is on track to continue in this direction for the foreseeable future. This shows interest in the cryptocurrency, which is an important indicator for whether or not people are actually going to use Bitcoin. The fact that it's an exponential growth is another good sign that things are just starting to pick up when it comes to Bitcoin being used by people around the world instead of traditional currency.

Another way to look at the growth of Bitcoin is by looking at the number of Bitcoin transactions as well as how the value of 1 BTC has risen dramatically over the last couple of years. Both of these signs point to Bitcoin becoming more popular until it reaches a tipping point and becomes mainstream. At that time, the growth of Bitcoin may slow, but it may be so entrenched in modern society that it's impossible for it to fail completely unless something drastic happens.

What's really interesting is that Bitcoin has no intrinsic value - it's not backed by gold or precious metals - and yet it's been able to experience all this growth because it's useful and scarce. Not everyone agrees that Bitcoin is "real money" at this point, but the number of people who are accepting it is growing all the time. Well, except for traditional economists who rely on established financial systems.

Because Bitcoin lacks a central authority, it scares a lot of people, especially those who are used to the powers that be deciding when to print money and how much to print. One sign that it is like a real currency is that it has experienced bubbles - going up and up in value and then "bursting" and losing value. This up and down movement of the value of Bitcoin is a good sign that it's going to eventually be accepted by at least some economists. Especially when you consider that Bitcoin is virtually invulnerable to inflation.

Other factors that have been contributing to the growth of Bitcoin include the ability to bypass government restrictions (especially in China) as well as it being able to transfer money almost-anonymously anywhere in the world almost instantaneously no matter the distance. Other virtual currencies offer these to an extent, but Bitcoin was the first to use a peer-to-peer network instead of a central authority in control of the currency. When you add in advanced encryption and anonymity, it's easy to see why Bitcoin is growing so quickly all over the world - and will likely continue to experience growth for the next decade at least.

As forced cutbacks and problems with existing financial systems occur around the world - like in Greece, for example, with austerity measures put in place - Bitcoin is going to become more useful for billions of people. Because Bitcoin is not tied to the current financial institutions - like banks and governments - the people are more likely to latch onto it and use it because of their hatred for what's been done to the world economy.

At the same time, if Bitcoin is to continue growing, it's going to have to come to terms with governments and financial institutions around the world. Because if not many people accept Bitcoin as a form of currency, it's still necessary to transfer bitcoins to your currency of choice before you can use it. This is why it's going to be necessary for Bitcoin to "grow up" eventually and learn to interact with current financial systems a little better. As this happens, Bitcoin is going to become even more popular around the world and experience a huge growth spurt.

In the far future, some fiat currencies may suffer from inflation and be dropped entirely as people begin to use Bitcoin instead. This may be decades away, but there are signs pointing to this happening. Banks are already collapsing around the world, but now people have an alternative - Bitcoin. It's going to be very interesting to watch the growth of Bitcoin as more and more financial institutions go under.

## Bitcoin Strengths and Weaknesses

While Bitcoin has a lot of strengths, there are some weaknesses for the cryptocurrency as well. We're going to take a look at both the pros and cons of Bitcoin so that you can get a better understanding of where this virtual currency is going to head in the years ahead.

The fact that it's already growing in popularity so rapidly is a good sign, but there are hurdles that Bitcoin is going to have to get over if it's to survive and thrive in the future.

### Strengths

First, let's go over some of the main strengths of cryptocurrency in general and Bitcoin specifically.

#### Anonymity and Privacy

One of the big strengths of Bitcoin currently is that it offers virtual anonymity and a lot more privacy than is found in current financial systems. Bitcoin uses hash addresses to send and receive money, and these hashes or addresses can be changed from transaction to transaction. Because of that, it's entirely possible for two parties to be completely anonymous when conducting their transactions.

Because addresses (hashes) can be created for each transaction, it makes it really difficult to track and trace financial activity of any single person in the network. And, unlike cash which is also private to an extent, you can use Bitcoin online to do virtual transactions. Add to that the fact that there's no central authority keeping tabs on all transactions, people can feel safer about their privacy.

#### No transaction fees

When you use a credit or debit card, the processor charges a transaction fee. The charge is given to the merchant which can cut down on their profit margin considerably. However, Bitcoin doesn't have transaction fees - at this time. When 21 million bitcoins are produced and released into the world this may change, but for now Bitcoin doesn't charge a transaction fee.



When Bitcoin mining goes away, there's going to be no financial incentive for people to verify transactions by solving a block and adding it to the block chain. At that time, there's a good chance that a low BTC transaction fee may be instituted in order to make sure others still verify transactions. Giving them a cut of the transaction fee will enable the system to continue.

#### No central governing authority

When you purchase something around the world, you're typically taxed by the government for the transaction. Currently, Bitcoin is not recognized as money by any government so it is not taxed. Most Bitcoin transactions could be thought of as trades - which are generally exempt from taxation by governments.

This is likely to change if and when Bitcoin begins to be recognized as legitimate currency around the world. This is actually an incentive for governments to legally recognize Bitcoin as proper money. No one is sure when or if this will happen, but it's something to think about as Bitcoin continues to experience a lot of growth around the world.

#### Weaknesses

Next, let's take a look at some of the weaknesses of Bitcoin. There's a good chance a lot of these problems are going to be solved going forward, but for now they're weaknesses.

#### Government interference

While this hasn't happened a lot - yet - there are many signs pointing to governments around the world interfering with the growth of Bitcoin. Whether it's stopping bitcoins from being transferred to bank accounts or something else, one of the biggest weaknesses of Bitcoin currently is the chance of even more government interference as the virtual currency becomes more popular around the world. This is also a good thing on some levels, however. For example, no one wants money laundering or other illegal activities to be condoned or made possible due to Bitcoin. So, in some ways, the fact that governments are starting to get involved is a good thing that will help Bitcoin grow even more in the years ahead.

#### No Monetary Sovereignty

Another weakness of Bitcoin is that it has no monetary sovereignty. Basically, this means that Bitcoin is not yet accepted as "real money" around the world. Bitcoin is not backed by any government currently. Some may consider this a strength, but it also poses some problems for people (especially corporations) that want to make money with Bitcoin.

Bitcoin is, at its core, another fiat currency that isn't backed by precious metals or other items of value. The exact value of a single BTC is that which is given to it by people. This makes Bitcoin extremely vulnerable to destabilization. For example, if a large number of people who have bitcoins suddenly decide to sell, this may cause a panic that devalues bitcoins considerably.

### Deflationary by design

As mentioned above in a previous section of this ebook, Bitcoin is subject to deflation and may end up in what's known as a deflationary spiral that's hard to escape once it starts going. Because there's going to be a finite amount of bitcoins - 21 million - there's a chance that they'll just keep increasing in value. While that may sound good at first, you have to look at the big picture. If Bitcoin deflation happens too quickly, investors are not going to want to invest large amounts of BTC because their efforts won't be rewarded as BTC becomes more valuable during the time it takes them to create a product and take it to market.

There's also the real possibility of a recession if a large number of people who purchase BTC for investment reasons hold onto their bitcoins. If they can control large amounts of the 21 million bitcoins that will be in circulation, there's a good chance that others won't be able to conduct transactions because they don't have enough bitcoins in their possession. At this point, a recession or even a depression become a real possibility.

### Accidental Loss and Theft

Another problem is the loss or theft of bitcoins. Because Bitcoin has no protection mechanism built into the currency, it's possible for someone to lose their wallet file. If this happens, the bitcoins they had in the wallet will be taken out of the system - theoretically forever. This could help spur the problems with deflation mentioned above.

Additionally, if someone manages to steal bitcoins from another person, there's no way to rollback the transaction, even if there's proof that a theft occurred. The Bitcoin system is built so that once a transaction happens it's there permanently. If not, it would destroy the integrity of the block chain. With most current financial transactions - like with a credit card - you can contest a transaction and get your money back. This isn't possible - currently - with Bitcoin. It's definitely something that needs to be considered moving forward.

### Black market appeal

Because of the decentralization of Bitcoin as well as the anonymity that it can provide, there's a good chance that many are going to try to abuse the system for financial gain. Because of the way it's set up, there's no way to deny any person or corporation from participating in the Bitcoin network. And this may make it favorable for black markets - like Silk Road - to use Bitcoin as a means to commit crimes online without being caught.

It is complicated to use

While the Bitcoin software is relatively easy to use, it's not as easy as whipping out your credit card and making a transaction. Because it's somewhat complicated to use, there's a chance that a lot of the world's population may not use it, which will affect whether Bitcoin continues to grow or not.

This is changing gradually as Bitcoin software becomes easier to use, but a lot more work needs to be done before Bitcoin really takes off. Luckily, there's a lot of financial gain to be had by those who can come up with easier ways to use Bitcoin. This means there's going to be a lot of people working on the problem of Bitcoin being difficult for some people to understand and use.

It is a poor use of computing power

Last but not least, you have to consider that Bitcoin mining takes quite a bit of processing power. This computational power could be used for other more productive reasons. Some say that the Bitcoin network is already the world's largest peer-to-peer network - at least when it comes to processing and number crunching. This may not seem like a big thing, but you have to consider all the electricity that's needed to keep all the computers on the network going.

## CHAPTER THREE

### ADVICE AND TIPS FOR BITCOIN

For this last chapter, we're going to stick with some simple advice and tips for you to get the most out of your experience with Bitcoin.

#### Become Involved

One of the very best ways you can learn more about Bitcoin is to become involved yourself. To do this, you just need to create a Bitcoin Wallet by installing the Bitcoin Client. Once you do this, you're going to be part of the network. You can use one of the methods mentioned earlier in the ebook to start to collect your own bitcoins and watch them increase or decrease in value over time.

#### Be Wary

At the same time, you want to be cautious about your participation with Bitcoin. There's always a chance that the value will drop considerably at a moment's notice. As with other investment opportunities, you want to make sure you don't keep all your eggs in a single basket. Still, Bitcoin seems to be a very good way to invest in a growing market. Just make sure you don't go "all in" and dump all your resources into what's still a very volatile market.

#### Research

While this book about the basics of Bitcoin is a very good place to start, there's a wealth of other information online - both positive and negative. Just make sure you don't simply read the good aspects of Bitcoin and ignore the potential problems. For Bitcoin to become a more stable form of currency, it's important for smart people to look at both the good and bad so that problems can be avoided before they happen.

#### Spread the Word

Another thing you can do to help Bitcoin spread is to tell your friends and family about the cryptocurrency that's gaining prominence online. There's a good chance that most people in your life don't even know about Bitcoin, let alone understand the way it works. This gives you an opportunity to help Bitcoin grow by educating people around you.

## Join the Community

You can also help Bitcoin become more successful by participating on one of the many forums that have popped up online since Bitcoin was first introduced. Whether it's on the official [Bitcoin.org](https://bitcoin.org) website or one of the other main communities, register for an account and join the conversation about Bitcoin. You never know if your idea will be one that's accepted by the community and used to make Bitcoin even better.

## CONCLUSION

As you can clearly see by reading this ebook, Bitcoin is a lot more than just "magic Internet money." While a lot of thought has gone into creating Bitcoin and getting it to grow, a lot more research and studies need to be conducted in order to make sure Bitcoin doesn't run into any large problems that cause it to collapse eventually.

The good news is that a lot of people (and corporations) are beginning to take Bitcoin more seriously. This may have something to do with a BTC being valued at hundreds of dollars currently, but there are other reasons as well. A lot are fed up with current financial systems - many of which have been shown time and again to be corrupt and in place to benefit those who are already rich.

As the economy around the world changes over the next few decades, there's a good chance that Bitcoin is going to emerge as the dominant form of cryptocurrency. Until that time, you can be sure that there's going to be a lot of discussion about Bitcoin - as well as a lot of people who get their feet wet with this new form of currency emerging. Many people believe that Bitcoin is one of the ways the world's financial systems can be fixed.

At the same time, Bitcoin isn't perfect. There are a lot of hurdles that need to be crossed before it becomes accepted as a form of "real money" around the world. However, if things continue to grow for Bitcoin as they are currently, there's a chance this will happen a lot sooner than some people think. As you know, things on the Internet can grow at an accelerated rate, and this is definitely happening with Bitcoin.

# GLOSSARY

## 1. Address

A Bitcoin Address is like a physical address in the real world or perhaps more similar to an email address, which is virtual. Basically, it is the method by which Bitcoin transactions are conducted. Money is sent from one Bitcoin Address to another Bitcoin Address. However, unlike other systems, a Bitcoin Address can be used once and then thrown away so you can create a new one.

## 2. Bitcoin

The word Bitcoin - when capitalized - refers to the overall concept of Bitcoin as well as the peer-to-peer network as a whole. When the word is not capitalized, it refers to a single unit - i.e. I have 10 bitcoins. The term is occasionally abbreviated as either BTC (more common) or XBT (less common).

## 3. Block

A Bitcoin block is a record of transactions that are grouped together. Every ten minutes - on average - a new block of transactions is added to the block chain after being verified by the process of Bitcoin Mining. It's important to note that blocks are added to the block chain in sequential order and are never reversed.

## 4. Block Chain

The block chain refers to all the individual blocks put together in chronological order. This is the backbone of the Bitcoin system and contains records of every single transaction on the Bitcoin network - all in sequential order. The block chain is used to help verify future Bitcoin transactions. Blocks added to the block chain must match up with the block previous as well as the next block added to the block chain. This helps prevent double spending and other problems.

## 5. BTC

This is the abbreviation for a single bitcoin. It's similar to the way USD refers to US dollars and other abbreviations used for other currencies around the world. Some people also use XBT, but BTC is more commonly used.

## **6. Confirmation**

A confirmation is just what it sounds like - a confirmation that a transaction has been processed by the Bitcoin network. Once a transaction is confirmed, it's not possible for it to be reversed. This causes some problems (no rollbacks of fraudulent transactions, for example), but it's also a way to make sure other problems don't happen. It's important to note that the more confirmation you have of a transaction, the less chance there is of a reversal of the transaction on the network.

## **7. Cryptography**

This is a branch of mathematics that deals with complex math problems that are used to encrypt or decrypt data. This is the basis of Bitcoin on many levels and why it's known as a cryptocurrency by some.

## **8. Double Spend**

This refers to the act of someone trying to spend the same Bitcoin for two different transactions by sending it to two recipients at the same time. The way Bitcoin is set up prevents this from happening because it's too computationally difficult to do this currently.

## **9. Hash Rate**

The hash rate refers to the amount of processing power the Bitcoin network is currently using at any given moment in time.

## **10. Mining**

Bitcoin mining is a term that describes the process of solving math problems in order to verify transactions. The reward for calculating the right answer is a set number of bitcoins that are released into the network.

## **11. P2P**

P2P refers to a peer-to-peer network. The technology was used by music and file sharing sites originally, but other uses of setting up a peer-to-peer network have been come up with over the years, including the Bitcoin network. In this system, there's no central server as each node or person becomes part of the network as a whole.



## **12. Private Key**

A private key is a hash that is generated to allow you to send and receive bitcoins from other members of the network. This is a string of numbers that shouldn't be shared with anyone else.

## **13. Signature**

Basically, a cryptographic signature is a mathematical way for someone to prove ownership of some digital bits. In this case, it's tied to someone's Bitcoin Wallet.

## **14. Wallet**

A Bitcoin Wallet is similar to a physical wallet in the real world. It's a place for people to store the bitcoins that they own. The term also refers to the Bitcoin Client, which must be installed to become part of the Bitcoin network.