



# CRYPTOCURRENCY CRASH COURSE

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Written by NewA.io December 2017

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# PREFACE

We believe the future of cryptocurrencies is bright and wondrous.

Remember still, it's a new and dangerous world within cryptocurrency and the internet in general. Frankly the jury is still out- especially with regards to government regulations in the space. The [IRS](#)<sup>1</sup> and [SEC](#)<sup>2</sup> have made some statements but remember this crash course ebook isn't investment advice - this guide serves only for entertainment purposes.

One final note, we worked hard to keep the cost of this book down while still generating value for users. Therefore, you may find a few affiliate links sprinkled throughout this guide. We went ahead and tagged this links so they wouldn't catch anyone off guard.

Feel free to use them or not, either way - we appreciate you reading the Cryptocurrency Crash Course 2018! Cheers!

***\*Nothing in this book should be seen as investment advice. This book is only intended for educational purposes\****

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<sup>1</sup> <https://www.irs.gov/newsroom/irs-virtual-currency-guidance>

<sup>2</sup> [https://www.sec.gov/oiea/investor-alerts-and-bulletins/ib\\_coinofferings](https://www.sec.gov/oiea/investor-alerts-and-bulletins/ib_coinofferings)

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# COMMON CRYPTOCURRENCY TERMS

Some of the basic, non-technical terms you'll likely encounter as you explore cryptocurrencies:

**Address:** Similar to an email, if you share this with another user they can transact tokens or coins with your account. Unlike email address though, it is recommended you generate a new address as it helps with security.

**Altcoin:** "Alternative coin", the term is commonly used to describe any cryptocurrency other than bitcoin.

**Blockchain:** A distributed ledger protected through cryptographically which is made up of blocks that contain transaction history of all users within the system. As the blockchain gains more blocks and grows longer and longer, it becomes increasingly difficult to alter older transactions thus having increased network security.

**Fork:** A fork occurs when there is a change in the code of a particular cryptocurrency. This can happen in different forms known as hard forks, soft forks and accidental forks..

**Hodl:** A cryptocurrency holder's favorite way to express that they do not intend to sell but hold for the long term instead. This saying is traced back to a drunken typo on a forum in the early days.

**Initial Coin Offering (ICO):** An ICO, also known as an initial token offering, is a means of crowdfunding where a company offers a new coin in exchange for bitcoin, fiat currency (U.S. dollars for example) or other digital currency (Ether, Litecoin, etc.)

**Miner:** A miner helps the network process transactions by processing complex algorithms which generate new blocks on the blockchain while rewarding the miners for their work.

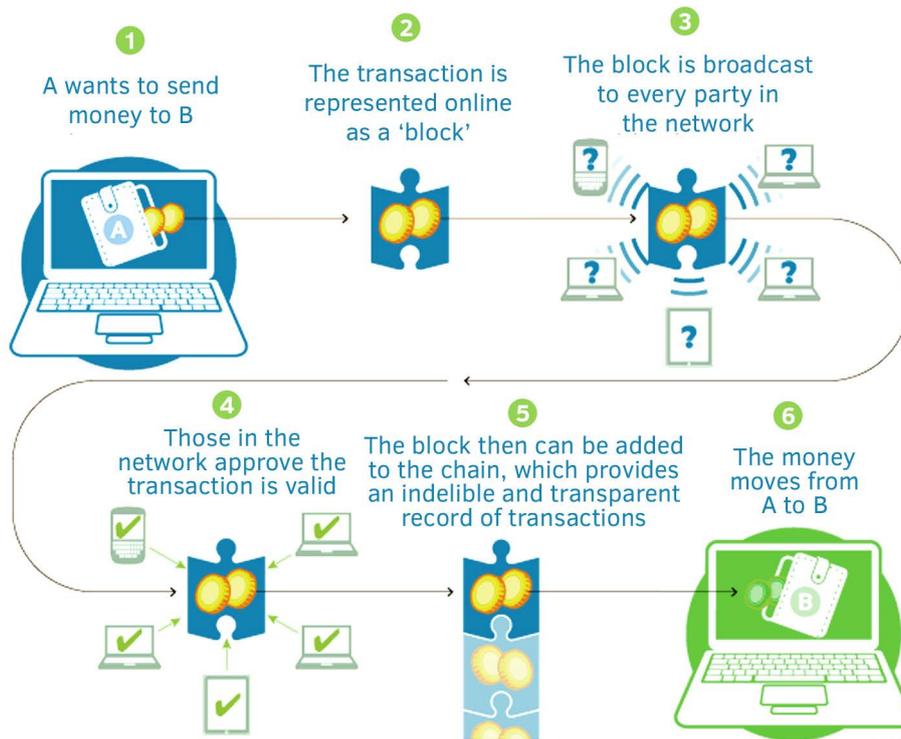
**Smart Contract:** An agreement that is coded into a contract which automatically executes when certain conditions are met. Most notably Ethereum, support smart contracts while many do not.

**Token:** A cryptocurrency or coin which has been created for a specific purpose, often referring to a Initial Coin Offering which will sell their company's token to act in a similar manner to an api-key for users to use their service after it is funding and built out.

**Wallet:** A wallet stores cryptocurrency tokens with private and public keys, which are necessary to send and receive coins. There are hardware, software and paper wallets. Do NOT lose your private key. Without a private key, you can't access your wallet through backup methods- so make sure to keep your private key extremely safe! Do not store it online!

# BITCOIN 101

## HOW THE BLOCKCHAIN WORKS



**Blockchain** is a technological innovation that allows transactions to occur without third parties through the use of a distributed ledger. In plain english, blockchain can power transactions (when you purchase an apple from the grocery store) without intermediaries (banks, card processors). Think of the blockchain like an open general ledger which maps all transactions.

Look at the example below, the ledger provides a list of all transactions. You can see two sample transactions below (please note the addresses are not real). The first transaction has “Bitcoin Address 1” sending 1 Bitcoin to “Bitcoin Address 2”. These transactions are verified by a network of computers which are known as “Miners”. The Miners work together to verify all transactions in the Bitcoin network through an open ledger. In other words, each Miner displays an open ledger with the exact same transactions and history as the other Miners. When a transaction occurs, it is verified and validated across all of the ledgers. One, does the first Bitcoin Address have enough Bitcoin to send? If Yes, then proceed to the next check, is the Bitcoin Address 2 a real Bitcoin Address? If Yes, the Bitcoin

is sent from one address to the other address and listed on every Miner general ledger. It takes roughly 10 minutes for a transaction to be verified across the Mining network. The blockchain is the underlying concept and technology behind the Miner system which allows anything to be verified/validated against a decentralized system of computers. Think legal contracts where Bitcoin Address 1 is the seller and Bitcoin Address 2 is the Buyer and the contract is verified by every computer on the network- therefore, no illicit copies or changes can be made. There are many applications for the Blockchain that are being developed by various companies through Alternative (Alt) Coins and projects.

Amount sent	Bitcoin Address 1	Bitcoin Address 2
1 Bitcoin	3J98t1WpEZ73CNmQviecrnyiWrnqRhWNLy	-> 1BvBMSEYstWetqTFn5Au4m4GFg7xJaNVN2
2 Bitcoin	3J98t1WpEZ73CNmQviecrnyiWrnqRhWNLy	-> 1BvBMSEYstWetqTFn5Au4m4GFg7xJaNVN2

## THE HISTORY OF BITCOIN

Started in 2009 after the financial collapse, Bitcoin has steadily proved analysis wrong on being a bubble. The original [white paper](#) written in 2009 by 'Satoshi Nakamoto' an unknown individual helped establish the protocol and concept of Bitcoin, the first cryptocurrency. This led to the first bitcoin transactions that took place between Satoshi and Gail Finney.<sup>3</sup> From then, a few cryptographically minded individuals joined the network which steadily grew to the \$600,000,000 marketplace that it is at the end of 2017.

## BITCOIN NODE

A more technical aspect of the cryptocurrency system is the node. In simple terms a bitcoin node is essentially a coin holder who can ensure that network remains secure. These nodes protect against double spending and ensure network attacks are not happening by confirming bitcoin transactions through a process of network consensus.

## HOW TO GET A WALLET

A Wallet is where you hold your bitcoin, apt to a bank account except here you are the bank as well. Below are some of our favorite wallet recommendations.<sup>4</sup>

- Hard Wallets - Trezor (similar to a USB)
- Offline Wallets
- Coinomia - Mobile wallet
- Exodus Wallet - Desktop wallet

<sup>3</sup> <http://historyofbitcoin.org/>

<sup>4</sup> <https://www.buybitcoinworldwide.com/wallets/set-up/>

## PUBLIC KEY VERSUS PRIVATE KEY

Think of the public key as your home address and your private key as your garage door code. With blockchain technology, cryptography uses both public and private keys to encrypt (hide) data from those without the proper key. With the housing example, you need both to get into your house but you keep your public key (aka home address) fairly available for the public while you won't share your private key with anyone outside your family! To be perfectly clear as this is important\*, a private key is moreso the same as the password to your bank account (bitcoin wallet in this case) so keep it protected and make sure not to lose or forget it! Private Keys cannot be recovered by anyone, so if you lose it, you can be out of luck!<sup>5</sup>



## HOW TO BUY & EXCHANGE BITCOIN

To purchase bitcoin you can go through a few different services. Remember to do your own research, yet these are our recommendations. These services will allow you to purchase bitcoin with your bank account, credit / debit card or Tether is a unique option which offers access to the top 10 altcoins.

- [Bitstamp](#) - lower fees but can take time to process
- [Payza\\*](#) - high fees with ease of use as a feature
- [Tether](#) - Transfer into a cryptocurrency that's pegged so that 1 tether = 1 USD
- [Bittrex](#) - Bitcoin / Tether to Altcoin Exchange \*tether is a cryptocurrency, with as much risk\*
- [LocalBitcoins](#) - Purchase bitcoins through variety of methods, locally or digitally
- [BitQuick](#) - Purchase bitcoin via bank deposits
- [Coinbase](#)- Easy Website and Mobile App that lets you purchase Bitcoin, Litecoin, and Ethereum

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<sup>5</sup> <https://www.comodo.com/resources/small-business/digital-certificates2.php>

# EXCHANGE / TRADING TOOLS

The general trading tools should prepare you for trading cryptocurrencies for a profit.

[CoinMarketCap](#) View exchange for total crypto market cap, daily volume and btc dominance.

All ▾	Coins ▾	Tokens ▾	USD ▾	Next 100 →	View All		
#	Name	Market Cap	Price	Volume (24h)	Circulating Supply	Change (24h)	Price Graph (7d)
1	 Bitcoin	\$180,906,888,728	\$10,754.80	\$10,729,000,000	16,821,037 BTC	-9.38%	
2	 Ethereum	\$94,854,163,825	\$976.30	\$3,902,680,000	97,156,979 ETH	-9.83%	
3	 Ripple	\$50,332,218,689	\$1.30	\$2,897,790,000	38,739,142,811 XRP *	-7.46%	
4	 Bitcoin Cash	\$27,048,410,277	\$1,597.94	\$702,553,000	16,927,050 BCH	-10.83%	
5	 Cardano	\$14,524,085,645	\$0.560190	\$499,568,000	25,927,070,538 ADA *	-9.42%	
6	 Litecoin	\$9,648,456,726	\$175.81	\$523,594,000	54,881,583 LTC	-9.49%	
7	 NEM	\$8,631,782,999	\$0.959087	\$74,481,500	8,999,999,999 XEM *	-12.16%	
8	 Stellar	\$8,343,536,350	\$0.466957	\$430,153,000	17,867,890,083 XLM *	-7.54%	
9	 EOS	\$8,192,887,100	\$13.18	\$2,372,300,000	621,591,525 EOS *	-10.56%	

[Coinigy\\*](#) - An all-in-one cryptocurrency trading platform with exchange. This is a beautiful premium platform.

[Preev](#) - Quick view of exchange rates; quickly see what 1 btc or other crypto is worth in fiat

[Buy This With That](#) - This guide allows you to which cryptocurrency is best to use for purchasing another one.

[Best Charts & Futures BTC](#) - These charts dive-in deep, dig into trades / see your whole portfolio

[Correlation Chart](#) - Correlation charts provides information about trends from top cryptocurrencies.

[TradingView](#) - A technical analysis website that allows you to monitor prices of cryptocurrencies using standard indicators such as Volume, RSI, MACD, etc.

[Arbitration Tool](#) - Trading between one platform to another & reaping the benefit of the margin

<https://cryptopanic.com/> - News Aggregator

### ALTCOIN EXCHANGE LIST

These exchanges allow you to go from Bitcoin / Ethereum / Tether into the hundreds of other cryptocurrencies. Remember that exchanges are an extremely dangerous point of attack because it's a centralized location for many tokens. For this reason, it has the lowest level of "security" in terms of your personal holdings being on an exchange.

[Bittrex.com/](https://bittrex.com/)

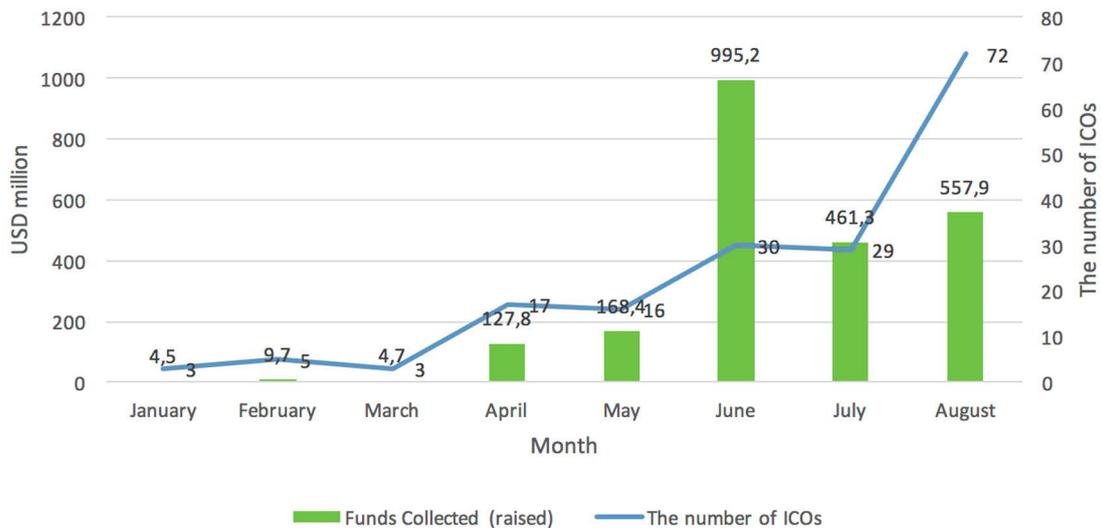
[Poloniex.com/](https://poloniex.com/)

[Cryptopia.co.nz/](https://cryptopia.co.nz/)

[Binance.com](https://binance.com)

# ICO / ALTCOINS

The number of ICOs and the amount of funds collected in 2017.



Initial coin offering (ICO) - Similar to an initial public offering by a company looking to get onto the stock exchange, an ICO is the first token sale for a new cryptocurrency or digital asset. There are currently 5000+ altcoins, or alternative coins to the first- bitcoin. A new token can be sold to investors through the ICO process or it can be airdropped to a specific community for future exchange and use. Here are some of the best resources for ICO.

## ETHEREUM WALLETS & CONTRACT ADDRESSES

Ethereum wallets contain an exciting new innovation to the original bitcoin blockchain concept. With Ethereum tokens, users can transact hundreds and thousands of different tokens across the Ethereum network. Instead of each token have it's own wallet, they all safely can rest within an ethereum address. "Eth tokens as they are often referred can grow in value with popular ones today being SALT or EOS already being valued over \$5 per token. The Ethereum network was created to help crowdfund these projects and allow developers a fast way to execute the blockchain technicals, thus allowing them to have more energy to invest into the project itself.

## AIRDROP ALTERS

[Airdrop Alters](#) - Automated alters when a new airdrop is about to be released. Great way to save for those with low capital.

## COMMUNITY NETWORKS

[Top Telegram / Slack Channels - Steem.it post](#)

Use this to tap into some of the heaviest influencers and networks within the cryptocurrency markets.

[Reddit ICO](#) Tap into the great reddit platform with this niche ICO thread

Facebook Group - [Crypto Capital Network - ICO Watchlist](#) -



## UPCOMING ICO

[Compare ICO](#) Get community insight on different ICO projects, trends and upcoming changes

[ICO Calendar](#) The best ICO projects as it only lists projects it feels are worth funding and following.

[ICO Ranking](#) Get your list of ICO with ranking system powered by ICORating.

[Smith & Crown](#) Curated list of ICO based on a specific criteria; ICO listed here have at least \$30,000 in funding.

## EVENTS AND NEWS

These two websites provide updates on when cryptocurrency related events are planned to take place on.

[Coin Event Calendar](#)

[ICO Timeline](#)

*Don't forget to check your local meetup too!*

## STEEM.IT

A Reddit style platform which rewards users with crypto for posting quality content. Steem. it utilizes a reward system though which pays user submissions with actual financial incentive.

## BOUNTY AND CAMPAIGNS

<http://bounty-ico.com/>

<http://blockbounty.io/>

A cryptocurrency bounty is a common way in which a cryptocurrency companies will market their coins or tokens. These include tasks such as sharing a cryptocurrency on social media or following a token's blog. This is a great way to get started into cryptocurrency with little capital.

[Bitcoin payment freelance system](#) - Similar to Elancer.com or Odesk.com, this website hires and pays freelancers in bitcoin for their work.

# GENERAL BEST PRACTICES & INDUSTRY PLAYERS

## QUICK PICK SECURITY TIPS

1. Watch out for phishing links
2. Ensure you're going to the correct URL -> Bookmarks
3. Exchanges are the most vulnerable place to hold tokens, a hard wallet or a hardware wallet is the best
4. Backup your data - twice
5. Don't lose your password!
6. If you don't hold your private key, you don't hold your coins/tokens.
7. Only invest as much as you are willing to lose!



## COLD STORAGE

This may be the safest place for your bitcoins if you can 1) remember your password 2) keep your private keys safe! By safe we mean, don't use your USB and make sure to always make a backup copy. If you have more than a little cryptocurrency- make two backups! If you lose your private key nobody will be able to get it back.

Cold storage is keeping your private keys off of a network so that they cannot be hacked and stolen digitally. There are two main types of cold storage, hardware wallets which act as a superb and fully-functional security apparatus and paper wallets. Since paper wallets simply rest offline, as long as you keep it written down in a secure location or memorizer it- you're coins will be safe. Remember though, if you lose your private key or password- your tokens will be forever lost.

## HARDWARE WALLETS

These are one of the safest ways to store your cryptocurrency.

- Trezor
- LedgerNano

## LIST OF BEST RESOURCES

“Best of” list of podcasts, newsletters, articles, etc By Patrick South

[Extensive list of Bitcoin Resources](#) By Jame Lopp

[A Complete list of Blockchain Resources](#) By Nidhriti Bhowmik

**Boxmining (Youtube):** Great channel with daily, easy to digest videos about current events in the cryptocurrency world. Very good resource for getting caught up with current events and to find topics for further research. His videos give a great summary level overview of many topics in the cryptocurrency world, where he often goes and participates in cryptocurrency conventions and interviews some key players in the exciting world of crypto. His videos are more about relaying news than giving investment advice.

**CoinMastery (Youtube):** Fantastic channel about investing in cryptocurrency. He applies his skills in stock technical analysis to the wonderful world of cryptocurrency, often discussing how upcoming crypto news influences how he invests and how it is different than investing in stocks. His channel was started about 4 months ago and is very sincere in the sense that he is documenting his own investments and does not just give his own advice without following it. He also gives great tips, such as how to use GDAX instead of Coinbase to buy and sell coins without paying for the fee. All videos are also recorded and put up as podcasts, for easy accessibility, wherever you may be.

**Hash Power - Ep.1 - Understanding Blockchains (Podcast):** Very great, easily digestible intro to blockchain technology, focusing on the two big coins, Bitcoin and Ethereum. This episode covers things like the basics of blockchain technology and how it works, programmable smart contracts and how it has opened the door to many other coins, initial coin offerings (ICOs), cryptography, and hashing. Overall, the episode answers the question: What is blockchain, and why might it significantly affect our world?

**Hash Power - Ep.2 - Investing in Cryptocurrencies (Podcast):** In a follow up to its previous episode, this episode walks through the world of investing. Interviewing founders from

three crypto investment firms (Polychain, Metastable, and Blocktower Capital), you get an insight on what these firms look at when they are investing. They give great advice on how they “bucket” the different coins based on their blockchain capabilities and how to diversify your investments.

## BLOCKCHAIN TECHNOLOGY OVERVIEW

Currently the biggest buzz in the blockchain world is Bitcoin, which is used as a cryptocurrency. However, blockchain technology actually has plenty of other use cases than just cryptocurrency. Some major blockchain applications include:

1. Cryptocurrency
2. Smart Contracts
3. Decentralized Autonomous Corporations
4. Decentralized Currency and Stock Exchanges
5. Digital Signature
6. Domain Name Registration
7. Voting
8. Identity Management
9. Proof of Existence
10. Internet of Things

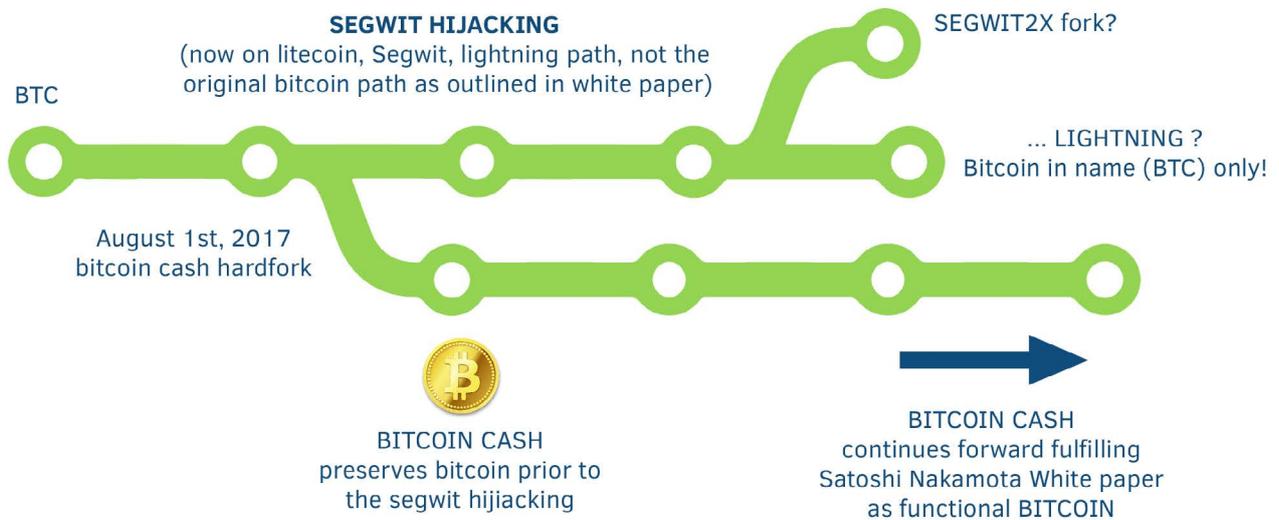
Understanding how blockchain technology works in each of these applications will be key to successful investments. Spreading your investments over different coins all in the same application category, such as investing in bitcoin, litecoin, bitcoin cash, etc which all fall under the category of being a cryptocurrency may actually have a smaller overall gain due to the fact that these are competing coins. Understanding the technology and making a blanket investment over coins in different applications helps diversify your portfolio. Similar to stocks and investing in general, it is important to have a well diversified portfolio. This will help you minimize risk. Many of the Alt coins move based on news, and you never know when an exchange can get hacked or an Alt coin banned by a country.

**BITCOIN VS ETHEREUM**

One large thing to understand is the difference in Bitcoin and Ethereum. The main purpose of bitcoin is to be served as a cryptocurrency. It's sole purpose is to be traded as a source of value, from one person to another. Ethereum however, serves as a "smart contract" which allows programmable logic in these interactions. Now the coin can be programmed to do X if Y occurs. This is a huge development in blockchain technology and has allowed for thousands of other coins to use Ethereum's smart contract platform to build their own logic and use cases. Many large corporations have taken notice to Ethereum's programmable capabilities and are discovering how it can be used for their own industry. Many corporations have banded together in support of the coin, forming the Ethereum Enterprise Alliance (EEA), which includes Accenture, BP, Cisco, Deloitte, ING, Intel, JP Morgan, Microsoft, and many more.



**FORKS**



A fork is when a cryptocurrency splits into 2 separate cryptocurrencies. We have seen multiple forks in Bitcoin, one of which created Bitcoin cash. Not all forked cryptocurrencies will be accepted by all of the exchanges so there is inherent risk in holding a coin through a fork. However, during the past few forks in the market, when a coin fork is announced, the time leading up to the fork has led to a bull run (positive price action). When a fork is accepted by an exchange, if someone holds the coin at the time of the fork, they will

obtain two coins, the original and the forked. Holding a coin through a fork can be highly profitable, especially if the forked coin picks up momentum and increases in value. This can be seen with the bitcoin cash fork, with its value now at about \$1000 a coin. We can see that with each announcement of a new bitcoin fork, the price of bitcoin has steadily increases up until the fork where a dip may shortly occur for those who held only for the reason of obtaining the forked coin. Historically, in the time leading up to a fork, altcoin prices are driven down due to the cash flow from altcoin to bitcoin as mentioned previously. This is a great time to make some profit, as predictably, the altcoin market will recover from its dip shortly after the fork occurs and the bitcoin prices take their dip.

### CLOSING NOTES

All and all, the cryptocurrency marketplace has seen an explosive 2017 year. The future of the industry remains bright but we must remember that the sector is also complete under regulated. It remains a swift signature away by a few powerful governmental figures to wipe its existence off the earth. Many would argue against this but the simple fact of the matter is, holding bitcoin is only valuable while people believe that it is valuable. The future may be cloudy with uncertainty but truly it can be a very bright one with a decentralized world. We believe decentralization is the way of the future.

To the moon!