2021 EDITION

ALL YOU NEED TO KNOW ABOUT...

CRYPTOCURRENCY

BASICS - OPPORTUNITIES - RISKS
- CASE STUDIES - DEEP DIVES

BONUS CHAPTERS DEDICATED TO THE ENTREPENEUR

All prices and statistics are correct as of January 2021. CryptoQuestion does not take responsibility for any information published in this book. The contents of this book do not constitute financial advice. Always seek independent financial advice before investing. Never invest more than you can afford to lose and always do your own research.

DEDICATION

To our followers, thank you for taking the time to enroll in our courses, read our articles, tweets and now our book. May we grow our community together so we can be a force for good in the cryptocurrency world. Our thanks to everyone who supports our mission to disseminate unbiased quality information to beginners to the cryptocurrency market. To the CryptoQuestion team. You are a light in what is sometimes a dark world.

CONTENTS

YOUR AUTHORS

The book you are reading is a team effort. Written by a team of crypto experts who have both traded and run their own crypto exchange. The team came together and launched CryptoQuestion (@cryptoimpartial) on Twitter and Instagram in 2020 and have since built a loyal following which grows daily. Many of the articles, reports and courses published by CryptoQuestion have featured on Medium, The Capital, Illumination, CryptoCompare, In Making of a Millionaire, Data Driven Investor and Coinmonks and have received many favorable reviews. It is CryptoQuestion's goal to continue to educate investors in the cryptocurrency investment space.

A FEW REVIEWS

'Nice high level, yet comprehensive overview of the space for new entrants.' Bridget @busy_buglet

'This is fucking gold Jerry. GOLD.' Shawnster @W88lfester

'Really entertaining… plz find the time to check this one. Alternative view to trading.' Moni @getmoni_io

'This is a masterpiece, I loved it. Thanks for sharing.' Selin Furkan Gul

INTRODUCTION

"An investment in knowledge pays the best interest" - Benjamin Franklin

This book could best be described as cryptocurrency made simple. It is an investor's guide which will show you how to get involved in the cryptocurrency market without losing your shirt!

The book examines the many opportunities in this fast paced market as well as focusing heavily on the risks and how to avoid them, including providing a useful checklist you can employ to assess all your investment opportunities.

We explain many complicated concepts in a simple way providing a deep dive into two areas that could offer huge potential. This book is a must read for anyone even faintly interested in the crypto market. The crypto market is here to stay so you may as well get ahead of the crowd and build your house now before the crowds show up!

We have written this book from an investors point of view. We also acknowledge the complexity of cryptocurrency and blockchain. We have to remember the crypto market was invented by a computer geek with an in depth knowledge of encryption. And this kind of explains why adoption is slow because many of the technologies are cutting edge and are not ready for the mainstream. The processing speeds are slow and the user interfaces are difficult to navigate. But that will change. It always does as long as the technology offers something that will improve the way we do things. And many of the new concepts and apps (called Dapps, as in decentralized apps) do offer something that has the ability to improve the way we do things, by cutting out the middleman.

The middleman dictates the price, their own profit and the rules of the game. Do you feel happy about Twitter being able to suspend your account for breaching its algorithm? Are you pleased that Facebook makes billions of dollars from your data and you receive nothing when it is

your vital statistics they are profiting from? Why do banks pass on only a fraction of the profit they generate from your savings? Blockchain aims to provide an alternative where something called a smart contract, which is an arrangement that excludes human intervention, cuts out the necessity of a middleman - what is being built here is a trustless system.

That is the background to blockchain and its potential to liberate us all from the ‘man’. And that is precisely why many governments around the world are either suspicious of this new technology or are damn right anti it.

Cryptocurrency as an investment is the wild west. It has attracted both the clever and the corrupt and many in between. However with some careful selection, similar to the days of the invention of the internet, there are some projects and cryptocurrencies that could be the next big thing. Sifting through the crap however is not an easy task as there is very limited independent research available on most of the currencies outside the top five. We will point you in the right direction and also provide you with the resources to conduct your own research, or as they say in this market, help you to DYOR (Do Your Own Research).

The cryptocurrency market is definitely exciting but you have to tread carefully as well as understand a few basic concepts to appreciate the potential. Our deep dives into the cloud computing market and how the disrupters like Amazon could be disrupted is revealing and will provide you with many interesting cryptocurrencies to investigate further for their growth potential. Our look at projects operating in the blockchain arena, an area which is fundamental to the whole ecosystem of cryptocurrency, will also provide you with many potential opportunities worth further research.

We have divided the book into two parts. The first part covers the basics of cryptocurrency and the second part is focused on the budding cryptocurrency entrepreneur.

We realize that things move quickly in the crypto market hence why we are committed to constantly update this book so it reflects the latest developments. Feel free to message us at chat@cryptoquestion.tech for an updated free e-book at any time.

Also please follow us on Twitter or Instagram: @CryptoImpartial

And finally if you want to learn more about the cryptocurrency market or have a question which you want a quick and informed answer to go to www.cryptoquestion.tech and ask away or enroll on one of our free online courses.

No Financial Advice

This book does not constitute financial advice in any way. The book should be treated as supplementary information to add to your existing knowledge base.

Happy reading!

PART ONE

THE BASICS

CHAPTER 1

UNDERSTANDING BITCOIN

The first mention of a product called bitcoin was in August 2008 when two programmers using the names Satoshi Nakamoto and Martti Malmi registered a new domain, bitcoin.org. In October of the same year, Nakamoto released a document, called a white paper, entitled "Bitcoin: A Peer-to-Peer Electronic Cash System." In the preceding months, Nakamoto and a group of volunteer researchers had proposed different versions of the concept in forums and email threads. It was in 2008 that it all came together.

The Bitcoin White Paper Source: Satoshi Nakamoto

The white paper laid out principles of Bitcoin, an electronic payment system that would eliminate the need for any central authority while ensuring secure, verifiable transactions. In short, the document described a new form of currency, one that allowed for trustless payments on the web – that is, they require a minimal amount or even no trust between parties.

In other words, the system allowed two users who didn't know or trust each other to exchange money in the same way they could pass cash back and forth. The system also allowed users to confirm messages, transactions and data using a tool called public key encryption, eliminating any need to disclose their identities to transaction partners or third parties. Pseudonymity, in this case, was a byproduct but not a primary feature.

In January 2009, the first bitcoin currency transaction occurred between two computers owned by Nakamoto and the late Hal Finney, a developer and an early cryptocurrency enthusiast.

To this day, no one knows who Satoshi Nakamoto really is. In the end, however, because of the decentralized nature of the platform, it is not considered important.

Bitcoin up Close

Bitcoins aren't printed, like dollars or euros – they're produced by computers all around the world using free software and held electronically in programs called wallets. The smallest unit of a bitcoin is called a satoshi. It is one hundred millionth of a bitcoin (0.00000001). This enables microtransactions that traditional electronic money cannot perform.

Bitcoin (often abbreviated BTC) was the first example of what we call cryptocurrencies today, a growing asset class that shares some characteristics with traditional currencies except they are purely digital, and creation and ownership verification is based on cryptography.

Generally the term "bitcoin" has two possible interpretations. There's bitcoin the token, which refers to the keys to a unit of the digital currency that users own and trade. A bitcoin token is held in a bitcoin wallet that is identified by a string of numbers and letters such as "1A1zP1eP5QGefi2DMPTfTL5SLmv7DivfNa." When someone wants to send you bitcoin, that

person will send it to your particular, public wallet address, and you will access it via your private key.

Then there's Bitcoin the protocol, a distributed ledger that maintains the balances of all token trading. These ledgers are massive files stored on thousands of computers around the world. The network records each transaction onto these ledgers and then propagates them to all of the other ledgers on the network. Once all of the networks agree that they have recorded all of the correct information – including additional data added to a transaction that allows the network to store data immutably – the network permanently confirms the transaction.

Bitcoin can be used to pay for things electronically, if both parties are willing. In that sense it's like conventional dollars, euros or yen, which can also be traded digitally using ledgers owned by centralized banks. Unlike payment services such as PayPal or credit cards, however, once you send a bitcoin, the transaction is irreversible – it cannot be called back.

That said, Bitcoin does not depend on a centralized system of banking. Because each node on the network is owned by a private entity, the entire network is responsible for maintaining the accuracy of the ledger. When you send a bitcoin – or a fraction of a bitcoin – to another person, the entire network takes part.

This process is called decentralization, one of the Bitcoin network's most important characteristics. No single institution controls the bitcoin network. The protocol is maintained by a group of volunteer coders, and run by an open network of dedicated computers around the world.

Since there is no central validator in this network, users do not need to identify themselves when sending bitcoin to others. When a sender initiates a transaction, the protocol checks all previous transactions to confirm the sender has the necessary bitcoin as well as the authority to send them. Put another way, bitcoin users theoretically operate in semi-anonymity and the network is self-policing, ensuring that bad actors cannot be rewarded.

Bitcoin is also pseudo-anonymous. In practice, each user is identified by the address of his or her wallet, which can be used to track transactions. Law enforcement has also developed methods to

identify users if necessary. Most exchanges are required by law to perform identity checks on their customers before they are allowed to buy or sell bitcoin. This means an exchange-assigned a wallet address is most likely connected to a particular user. However, cryptocurrency wallets are not limited to exchanges or other online services, and a wallet generated by an anonymous user on a single computer is fairly difficult to trace. Further, every transaction on the network is fully transparent, a fact that concerns some privacy advocates. Ultimately, tracing a bitcoin transaction to a specific person is difficult but not impossible, and any statements describing the "anonymity" of bitcoin are inaccurate.

Since the network is transparent, the progress of a particular transaction is visible to all. Once that transaction is confirmed, it cannot be reversed. This is called immutable. You will hear this phrase used often in the crypto world. This means any transaction on the Bitcoin network cannot be tampered with, making it immune to hackers. Most Bitcoin hacks happen at the wallet level, with hackers stealing the keys to hoards of bitcoins rather than affecting the Bitcoin protocol itself.

Another attribute of Bitcoin that takes away the need for central banks is that its supply is tightly controlled by the underlying algorithm. With fiat currencies (dollars, euros, yen, etc.), central banks can issue as many currency units as they want and can attempt to manipulate a currency's value relative to others. Holders of the currency, especially citizens with little alternative, bear the cost.

With Bitcoin, a small number of new coins trickle out every hour, and will continue to do so at a diminishing rate until a maximum of 21 million has been reached. This makes bitcoin more attractive as an asset: in theory, if demand grows and the supply remains the same, the value will increase.

Roughly every four years, the amount of bitcoin that miners can earn in the network will be halved, potentially driving up the asset's price. Such an event is called bitcoin halving (the most recent one happened in May 2020).

The Mechanics of Bitcoin

We're sitting on a park bench. It's a great day. I have one apple with me, I give it to you. You now have one apple and I have zero. That was simple, right?

Let's look closely at what happened:

My apple was physically put into your hand. You know it happened. I was there, you were there – you touched it.

We didn't need a *third person* there to help us make the transfer. We didn't need to pull in Uncle Tommy to sit with us on the bench and confirm that the apple went from me to you.

The apple's yours! I *can't* give you another apple because I don't have any left. I can't control it anymore. The apple left my possession completely. You have full control over that apple now. You can give it to your friend if you want, and then that friend can give it to his friend, and so on.

So that's what an in-person exchange looks like. I guess it's really the same, whether I'm giving you a banana, a book, a quarter, or a dollar bill …

Now, let's say I have one *digital* apple. Here, I'll give you my *digital* apple. Ah! Now it gets interesting.

How do you know *that* digital apple which used to be mine, is now yours, and only yours? Think about it for a second. It's more complicated, right? How do you know that I didn't send that apple to Uncle Tommy as an email attachment first? Or your friend Joe? Or my friend Lisa too?

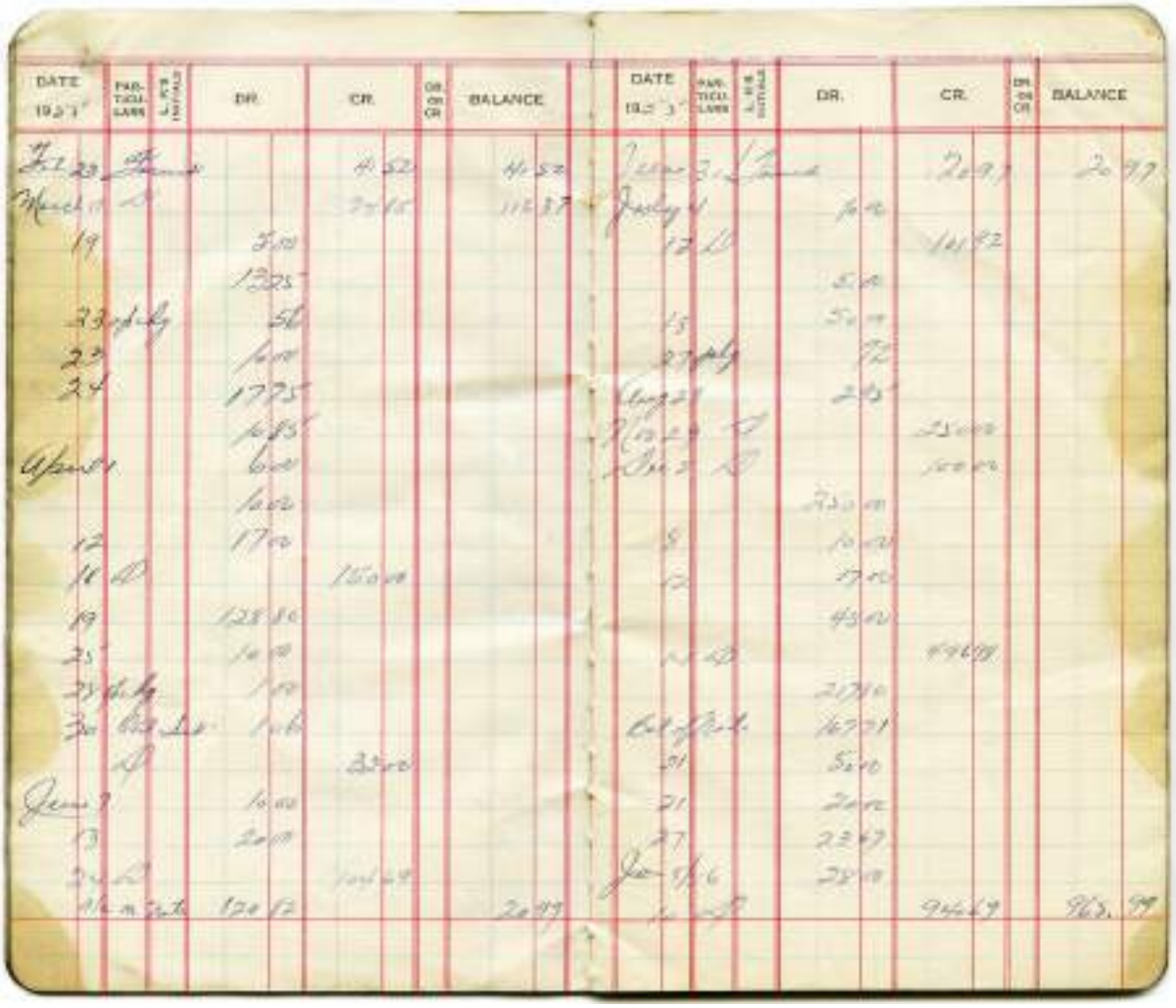
Maybe I made a couple of copies of that digital apple on my computer. Maybe I put it up on the internet and one million people downloaded it.

As you see, this digital exchange is a bit of a problem. Sending *digital* apples doesn't look like sending *physical* apples.

Some brainy computer scientists actually have a name for this problem: it's called the double-spending problem. But don't worry about it. All you need to know is that it's confused them for quite some time and they've never solved it. Until now.

But let's try to think of a solution on our own.

Ledgers



Maybe these digital apples need to be tracked in a ledger. It's basically a book where you track all transactions – an accounting book. This ledger, since it's digital, needs to live in its own world and have someone in charge of it.

Just like World of Warcraft, say. Blizzard, the guys who created the online game, have a "digital ledger" of all the rare flaming fire swords that exist in their system. So, cool, someone like them could keep track of our digital apples. Awesome – we solved it!

Problems

There's a bit of a problem though:

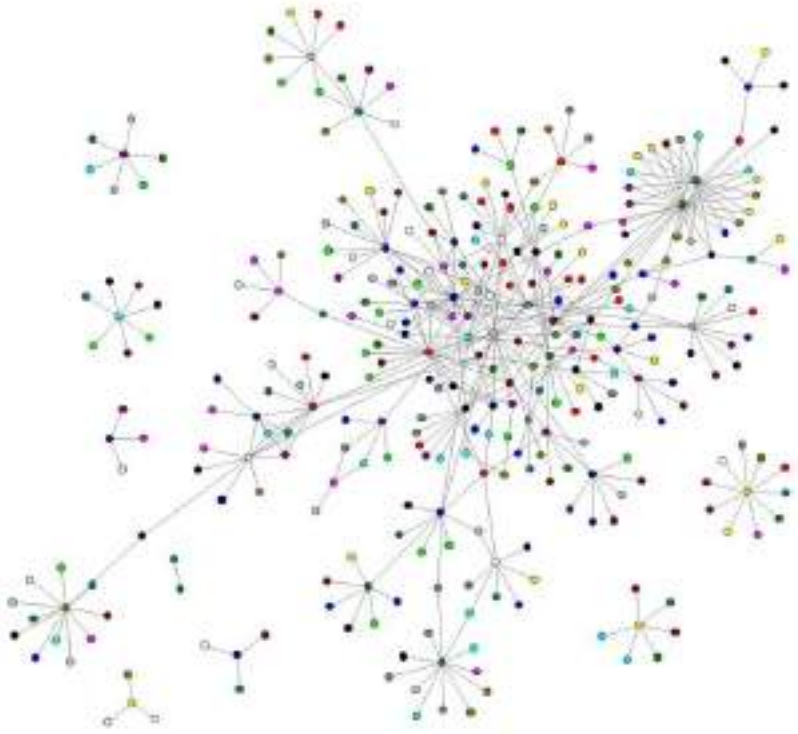
1) What if some guy over at Blizzard created more? He could just add a couple of digital apples to his balance whenever he wants!

2) It's not the same as when we were on the bench that day. It was just you and me then. Going through Blizzard is like pulling in Uncle Tommy (*a third-party*) for all our park bench transactions. How can I just hand over my digital apple to you in the usual way?

Is there any way to closely replicate our park bench transaction digitally? Seems tough …

The Solution

What if we gave this ledger to *everybody*? Instead of the ledger living on a Blizzard computer, it'll live in everybody's computers. All the transactions that have ever happened, from all time, in digital apples, will be recorded in it.



You can't cheat it. I can't send you digital apples I don't have, because then it wouldn't sync up with everybody else in the system. It'd be a tough system to beat. Especially if it got really big.

Plus, it's not controlled by *one person*, so I know there's no one that can just decide to give himself more digital apples. The rules of the system were already defined at the beginning.

And the code and rules are open source – like the software used in your mom's Android phone. Or kinda like Wikipedia. It's there for smart people to maintain, secure, improve, and check.

You could participate in this network too – updating the ledger and making sure it all checks out. For the trouble, you could get like 25 digital apples as a reward. In fact, that's the only way to create more digital apples in the system.

We simplified quite a bit … But that system we explained exists. It's called the *Bitcoin protocol*. And those digital apples are the *bitcoins* within the system. Fancy! So, did you see what happened?

What does the Public Ledger Enable?

1) It's open source, remember? The total number of apples was defined in the public ledger at the beginning. I know the exact amount that exists. *Within the system*, I know they are limited *(scarce)*.

2) When I make an exchange I now know that *digital* apple certifiably left my possession and is now completely yours. I used to not be able to say that about digital things. It will be updated and verified by the public ledger.

3) Because it's a public ledger, I didn't need Uncle Tommy (third-party) to make sure I didn't cheat, or make extra copies for myself, or send apples twice, or thrice…

Within the system, the exchange of a digital apple is now just like the exchange of a physical one. It's now as good as seeing a physical apple leave my hand and drop into your pocket. Just like on the park bench, the exchange involved two people only. You and me, we didn't need Uncle Tommy there to make it valid.

In other words, it *behaves* like a physical object. But you know what's cool? It's still digital.

We can now deal with *1,000 apples*, or *1 million apples*, or even *.0000001 apples*. I can send it with a click of a button, and I can still drop it in your *digital* pocket if I was in Nicaragua and you were all the way in New York.

I can even make other digital things ride on top of these digital apples! It's digital after all. Maybe I can attach some text on it– a digital note. Or maybe I can attach more important things; like say a contract, or a stock certificate, or an ID card …

So this is great! How should we treat or value these "digital apples"? They're quite useful aren't they?

You now know more about Bitcoin than most!

CHAPTER 2

SOLVING THE BITCOIN DILEMA

Should investors ignore traditional investment advice and borrow to invest in bitcoin? On Christmas day bitcoin (BTC) reached another all time high. Unlike the stock market the cryptocurrency market never sleeps. However in many ways cryptocurrencies, or more specifically bitcoin, possesses similar qualities to stocks.

A few weeks ago the latest hot topic on the social media platforms was whether it was wise to borrow against your home and invest in bitcoin. That discussion had started after a well known podcaster admitted he had taken out a loan failing to tell the lender what he intended to use the money for. The discussion moved away from the ethics of his actions and towards whether it was an acceptable risk to borrow money to invest in bitcoin. The reaction was mixed.

That discussion is the crux of this chapter. Should we be throwing caution to the wind and ploughing our spare money into bitcoin? When you read about companies like MicroStrategy investing the bulk of their surplus cash into bitcoin (over $1bn including borrowings of $650m) and that Elon Musk is contemplating doing the same at Tesla you have to ask yourself a very important question: Am I missing something?

It has been said that every event is a repeat of the same or similar situation from the past. These past events generally establish certain rules which should be followed based on past experience. In the case of the phenomenon which is bitcoin by throwing caution to the wind and disregarding these investment rules we are declaring that bitcoin is unique, that the world has never seen anything like it before.

Investment rules

What are these investment rules which have been learnt over many years through the school of hard knocks? Here are the eight most important ones which are particularly relevant to bitcoin.

1. **Don't invest money you'll need right away**. Always have an emergency fund. Following on from this basic rule, don't invest what you cannot afford to lose. By ensuring you never invest all your money into one investment if the worst case scenario comes to fruition you are still able to remain in the game. There are many horror stories of people investing all their available savings into a single stock which they think is the next big thing, a commodity, junk bonds, an alternative investment (from ostriches to tulip bulbs) or an attractive looking property play. Some work out, most don't hence the rule!

2. **Don't invest in anything you don't understand.** This is Warren Buffett's golden rule and has stood him in good stead throughout his long and successful investment career. Do you really understand how bitcoin works? Do you understand the factors that influence its price? Are you investing because everyone else is? Or have you sat down and worked out independently of anyone else why bitcoin is a solid long term investment?

3. **Leave your investments alone.** Another one of Mr Buffett's golden rules. Don't be one of those people who checks the price of your investment ten times a day. The best practice is to buy an investment and hold it. That policy has worked exceptionally well for Warren and his investors over the years.

4. **Diversify your portfolio.** Often described as the golden rule of investing. This rule doesn't just mean investing in a large number of stocks to spread your risk, it also means having different

kinds of investments (stocks, bonds, gold, property and bitcoin) that will perform differently over time reducing overall risk. This is where bitcoin fits in, as a *constituent* of a well diversified portfolio.

5. **Do not invest in single stocks**. This rule doesn't just cover stocks, it covers any type of investment. If you are presented with something that your advisor says is the best investment opportunity he has seen in his long illustrious career and recommends you invest your entire savings into it I think a fair response would be a stiff punch to the nose. It is always advisable to spread your risk among a basket of investments which react differently to market conditions.

6. **Understand your risk tolerance.** Are you a risk taker or risk averse? Are you a pensioner who needs a financial loss like a hole in the head? Are you young with money to burn? Do you panic when one of your investments loses 20% in value in one day? Do you sleep like a baby despite market turmoil? These are all factors which you must consider when investing in any asset. If you don't handle stress well and panic when bitcoin dives by 50% in a day then this investment isn't one for you. Likewise if you are a pensioner who is in need of a regular income investing any of your pension in bitcoin is not advisable.

7. **Buy when everyone is fearful.** This rule is the signal of a cold hearted professional investor. When the crowd is selling in panic the professional with nerves of steel is snapping up unwanted stock or in this case bitcoin believing the market has overreacted. A shrewd investor goes against the crowd not with it. When the Uber driver tells you he has purchased bitcoin, that is when you want to take profits and wait for the same driver to tell you he has sold, then buy.

8. Don't deviate from the process. Follow your investment rules religiously. The first time you deviate from your rules that is the start of the end. It is like an alcoholic taking his first drink after being on the wagon for twelve months! If you decide to hold 5% of your portfolio in bitcoin stick to that and rebalance your portfolio.

Does bitcoin deserve special treatment?

Some of the most enthusiastic among us may say these rules do not apply to bitcoin. Bitcoin is unique. To that we respond with the wise words of Sir John Templeton the successful value investor who once said "The four most costly words in the annals of investing are 'this time is different.'"

Risks

With any investment it is not all one way traffic. There are also many risks attached to bitcoin which tend to be brushed under the carpet when market exuberance takes over. When the market turns it becomes quickly obvious that we should have realized that there were glaring downsides to our once faultless investment. What are the glaring downsides to bitcoin? Here are a few.

- Despite the often cited argument that the maximum supply of bitcoin is restricted to 21m coins we often forget that each coin can be divided into 100,000 Satoshi's.
- BTC is already a mainstream investment or store of value however it is barely utilized as a medium of exchange because of its volatility and the snails speed in which Bitcoin processes transactions (BTC blockchain processes 7 transactions per second compared to 24,000 for VISA).
- There is no intrinsic value behind bitcoin.
- There is no generally accepted valuation model to determine bitcoin's value. A few valuation models that do exist suggest an intrinsic value of under $5,000 based on the opportunity cost of using an alternative to bitcoin and the financial savings made as a result of using bitcoin. These models have their faults and do not take into account other non financial factors.
- Regulation. A few countries have banned bitcoin such as China and India (China prohibits exchanges from dealing legal tender for virtual currency). What would happen if the US instituted a ban?

Counter arguments in favor of bitcoin

For each risk there is a strong counter argument especially as the bitcoin frenzy remains in full flow.

A few convincing ones for the value of bitcoin to continue its rise include:

- Based on 100,000 Satoshis for each BTC, a value of $1 per Satoshi (and $100,000 per BTC) would produce a market cap of $1.8 trillion (it is $500bn now), compare that to golds market cap of roughly $10 trillion that is a strong argument for BTC to continue its rise for some time to come.
- Whilst bitcoin's blockchain is fundamentally slow there are networks which work on top of the blockchain that will speed up the processing of transactions so it is competitive with centralized systems. This will increase future adoption and therefore the price.
- Cryptocurrency will become more user friendly in terms of user interfaces and ease of use (including security and storage). This will lead to widespread adoption.
- Bitcoin will become a mainstay of every investor's portfolio.

A Sensible Conclusion

It all comes down to risk tolerance. As we saw earlier a person's risk tolerance depends on a number of factors. This article is not by any means saying don't invest in bitcoin. We are advocates of bitcoin and can see the price continuing to rise. A price of $100,000 isn't a mere pipe dream any more, it is a real possibility. However like with most investments in the past and present things don't always turn out the way we expected. As they say, there is many a slip between cup and lip. This slip could be the US imposing a ban on bitcoin, unlikely but possible. A competitor to bitcoin could emerge which quickly overtakes bitcoin. This is a more likely scenario in the medium term with Facebook's virtual currency being a main contender.

Nothing is risk free. There was the tulip bulb mania back in the 1600s and the dot com bubble in the late 1990s. It is always best to urge on the side of caution. Borrowing against your home is the

act of a maverick investor or someone who has let greed go to his head. It rarely turns out well. The sensible investor would do better to add bitcoin to his portfolio and limit it to below 10% (5% feels about right). The overriding fear in all of us is the fear of missing out—they even have an acronym for it (FOMO). The fear of losing your home or your car should always override this. That is why the golden rule in the case of bitcoin is only invest what you can afford to lose. If you can't afford to lose it don't invest it—simple.

CHAPTER 3

UNDERSTANDING ALTCOINS

By now, it's safe to say that Bitcoin has had a tremendous impact on the world. As a result of Bitcoin's widespread impact, many have tried to follow in Satoshi Nakamoto's footsteps and attempted to create their own cryptocurrency. Today, there are *thousands* of different cryptocurrencies—effectively making bitcoin a catalyst of the crypto world. These post-bitcoin coins are referred to as "altcoins."

What are Altcoins?

Following the massive popularity and success of Bitcoin, people began to take Bitcoin's model and create their own digital currencies.

Altcoin, the term coined for cryptocurrencies following Bitcoin's success, comes from two words: "alt" and "coin"—meaning "alternative coin." These are generally marketed as being strong alternatives to Bitcoin as they tackle what some people believe to be Bitcoin's limitations. Despite that selling point, altcoins still have to compete against Bitcoin, the most popular (and highest valued) cryptocurrency in the world, and *must* have competitive advantage against Bitcoin to succeed.

Many altcoins are built using the basic framework of Bitcoin, giving most of them that much-desired aspect of being "peer-to-peer". Also, much like Bitcoin, they aim to provide a cheap and efficient means of transaction.

As of late 2020, there are over 6,000 different cryptocurrencies on the market and according to CoinMarketCap.com, 43 percent of the total cryptocurrency market is accounted for by altcoins.

The first-ever altcoin came in April 2011, just two years after Bitcoin's creation. Namecoin (NMC) was created to inject decentralization into name registration on the web (making user domains less visible—allowing for increased censorship resistance and anonymity), as well as being an alternative digital currency to bitcoin. The coin was based on the code of bitcoin and even used the same proof-of-work algorithm. Additionally, just like its predecessor, Namecoin's supply was capped at 21 million.

Another popular altcoin that gained traction not so long after bitcoin's creation was Litecoin. Introduced in October 2011, Litecoin was advertised as "the silver to Bitcoin's gold." However, unlike bitcoin, Litecoin had a supply cap of 84 million, which is four times BTC's supply. Despite it following the path that Bitcoin paved, Litecoin was different in many ways—mainly, it approved mining and transactions much quicker and more frequently. Unlike Namecoin, which eventually fizzled out, Litecoin remains among the top 10 cryptocurrencies, in terms of total market cap.

The Different kinds of Altcoins

As altcoins evolved over the years, categories within the "altcoin" umbrella have emerged. Here are a few different kinds that have been created over the years:

Mining-based Altcoins

These are the altcoins that followed the mining aspect of bitcoin—the process in which new coins are created by solving challenging cryptographic equations to unlock blocks. Some of the top altcoins on the market are mining-based, including the extremely popular Ethereum.

Security Tokens

These are similar to traditional stocks, in the sense that they often promise dividends like ownership of a business or a payout. They're often launched in an Initial Coin Offering (ICO) and are linked to businesses.

Utility Tokens

Utility tokens are sometimes sold through an ICO as well. However, unlike security tokens, they will provide a claim on services. The main difference between a security token and a utility token is that security tokens pass the Howey Test (the legal test to determine whether a token represents a security), while utility tokens do not.

Stablecoins

The main goal of stablecoins is to cancel out the volatility that comes from cryptocurrencies. They cancel out the volatility by tying the value of the coin to real-life assets like fiat currencies (such as the US dollar or Euro), resources (like gasoline), and precious metals (like gold). Popular examples of stablecoins include Tether and Libra/Diem (which may be the most popular stablecoin even though it hasn't even launched yet).

Promising Altcoins on the Market

**All figures stated are based on the prices and market caps of January, 2021*

Now that you know what altcoins are, let's take a look at some of the most popular examples on the market—you may have even heard of a few of them:

Ethereum (ETH)

Ethereum has, for a long time, come in as the second most valuable cryptocurrency on the market—right behind bitcoin. It's a smart contract platform on which developers are given the opportunity to build Dapps (decentralized applications). It was conceptualized in 2013 by Vitalik Buterin, a popular figure in the cryptocurrency world.

Price: 1380.00 USD

Total market cap: $149.00 Bn

Ripple (XRP)

Ripple, or XRP, is advertised as the "most efficient settlement option for financial institutions and liquidity providers," as it provides fast transactions and governance—allowing for accessibility, global reach, and fast settlements.

Transactions on the Ripple network can be completed within seconds and the goal of the team is to provide the world the ability to move value like information on the web. Despite being one of the largest cryptocurrencies by market cap the currency is under a cloud at the moment as the SEC recently lodged a complaint stating XRP is a security.

Price: 0.2893 USD

Total market cap: $13.095 Bn

Tether (USDT)

Tether, as mentioned earlier, is one of the most popular stablecoins (and even among cryptocurrencies in general—ranking 3rd among *all* coins) on the market. USDT mirrors the value of the US dollar with the idea of providing a stable cryptocurrency (free from volatility)—acting as "digital dollars." It is also issued on the Omni, TRON, and Ethereum blockchains.

Price: 1.00 USD

Total market cap: $21.0 Bn

How to Buy altcoins

Altcoins are available on many exchanges and peer-to-peer marketplaces. On Paxful, you can trade your BTC for different altcoins (with USDT and Bitcoin Cash being the most popular options).

Why Altcoins are Important

The importance of altcoins lies in their definition: they target the limitations of bitcoin and provide alternatives with different benefits.

For people who may seek out a new flavor beyond the world of Bitcoin, altcoins may be the perfect option. They have specifically targeted issues people have with bitcoin and provided strong alternatives with equally affordable prices and fast speeds.

Another reason why altcoins are important is that they make great investment tools. With the success of bitcoin in investors' minds, people are looking to get in on the ground floor by creating and investing in new and practical cryptocurrencies—then selling it when the value rises, that is the theory anyway.

A Continuing Expansion

Since its creation, bitcoin has remained as the top dog of all cryptocurrencies. However, plenty of altcoins are beginning to make some noise. With over 6,000 cryptocurrencies currently on the market (and more being introduced every day), it's only a matter of time before people find the next big thing—but until then, we have thousands at our disposal, and that's not half bad.

CHAPTER 4

GAINING AN EDGE

This book is for the person who is interested in dipping his or her toe into the cryptocurrency water but wants to ensure that his or her whole leg is not consumed by a pool of sharks! And we say that because the crypto market is full of sharks, hence why we believe this book is going to be valuable for the novice investor. So how do we ensure our toe is safe?

Cryptocurrency market in its infancy

As an ex stockbroker I know plenty of ways to obtain independent research on what stocks to buy, hold or sell. Research is written by highly experienced and qualified analysts employed by investment banks and brokerages, and is available online and in various investment publications.

But the same resources are not available to the cryptocurrency market participant. It is pretty obvious to understand why. The market is relatively new. Bitcoin (BTC) was only invented in 2008. Rival cryptocurrencies such as Litecoin began to emerge in 2011. Ether, the second-largest coin by market cap, wasn't launched until 2015.

The launch of the Ethereum platform (of which ether is the native currency) was the start of the real action. The market really is still in its infancy. But the crypto market is unlike any other. It moves at lightning speed. It has been described as the wild west of investing. We will go a stage further and describe it as the wild wild west of investing! There are now over 6,000 cryptocurrencies trading in the wild wild west. The question is how do you go about picking one?

How do I invest in the cryptocurrency market?

I really don't like this next phrase but I am afraid it applies to the above question, 'It all depends…'

It all depends on what your risk tolerance is. Are you in the business of speculation? I.e. to make a quick buck and then move onto the next opportunity or, are you in the business of investing? I.e. you are a long term believer in cryptocurrency and want to hold one or more coins because you believe they will increase in value in the long term (called a Hodler in the crypto world).

Let's deal with the latter investor first — the long term investor.

Here the situation is much more straightforward as regards selecting coin/s which offer the best value with less risk.

Let's examine the words 'less risk' next.

Risk and cryptocurrencies

They say that cryptocurrencies are not correlated with the stock market and therefore this is a great reason for investing when we are facing volatility or a bear market. However, that hasn't proven the case recently. They also say it won't last, but don't believe it! If you are investing to diversify your portfolio and reduce risk — think again.

What are the risks of investing in cryptocurrencies? Let's use BTC as the example here as this is by far the biggest coin by market cap and as a result less risky than the other 'altcoins', assuming you are looking for a medium to low-risk investment (although you could never describe BTC as low risk).

1. Price volatility — obvious right? BTC is far more volatile than any of the S&P constituents. However some limited research has concluded that if you use 'risk adjusted returns' then BTC is a superior investment than both gold and the S&P 500 (in one piece of research BTC scored 1.97, gold 1.06 and the S&P 500, 0.25). The fact is do you really want to experience this level of volatility? Can you sleep at night when your investments are up and down like the mood swings of a demented girlfriend (or boyfriend)? If the answer is no then cryptocurrency is not for you!

What are risk-adjusted returns?

This is a measurement to allow you to compare investments which have different risks and returns. It allows you to adjust the risk, return and volatility on each investment and compare it with other investments to establish which offers the superior investment opportunity.

2. Choosing the right place to buy your coins — Select one of the regulated exchanges — not one with no domicile and was only set up last week.

3. Storing your coin — Most people store their coins with the exchange they buy through. It is nice and simple. However it does open themselves up to the risk of these exchanges being hacked. And despite what they tell you — the majority of exchanges have been hacked at one time or another. So on that basis you should pick an exchange that has insurance and is regulated. A big hack could lead to the closure of an exchange. The other solution is you store you newly acquired coins yourself. But before you rush into this, take some time to consider your options. Will you store your coins on a USB? And if so where will you hide it, together with the piece of paper with your password, so you won't accidentally throw it away? Estimates are that 20% of BTC are lost forever because people lose stuff! This is a serious and often overlooked consideration.

Lets see what Robinhood Crypto, one of the largest brokerages in the market, say about storage:

'Cryptocurrencies that you purchase on Robinhood Crypto are stored in a mix of cold (offline) storage and hot (online) storage. The majority of your coins are held in cold storage…

We also carry crime insurance that protects a portion of the assets held across our storage systems against losses from theft…'

If you are a long term investor we would suggest this isn't the best way to purchase your crypto but it is a hassle free way. Unfortunately hassle free can lead to problems later….

Let us dig a little deeper into what affects the price volatility of cryptocurrency investments.

1. Reasons could include:
2. Government regulation or intervention

3. Economic factors, both global and domestic
4. Software bug/s
5. Team ran off with the money — turned out it was a Ponzi scheme
6. Competition
7. Poor execution of the idea
8. Slow or no adoption

Adopting a risk averse investment strategy

Taking into account the above risk factors the best strategy, if you are looking to minimize your risk exposure to the cryptocurrency market, is to invest in one or both of two coins, BTC and ETH.

The majority of the value in the market are in these two coins — representing 81% of the total value in the entire cryptocurrency market. 69% in BTC and 12% in Ether. The total market cap of all listed coins stands at $732bn and the top 5 represents 86% of this. The top 10, 90%. The so-called blue chip coins are in the top five. Although there are two we would dismiss from the investment equation, subject to your own research of course, XRP and Tether. These both have their issues, as an investor with a long term investment goal, steer clear from anything with issues. Some 'experts' believe you should invest at least 50% of the funds you have allocated to your cryptocurrency investments into BTC and the remainder should be spread between two or three other top ten coins.

This takes us back to the research resources available…

There is an abundance of independent and non independent information available on the top ten coins. There is one big caveat however before we can move on.

Unlike the highly regulated stock market there is a huge amount of ramping going on in the crypto market. You will see articles expounding the virtues of BTC and how it is expected to reach $100,000, We have even seen predictions of over $1m. But if you are not blinded by such exuberance you will also see through the mist and notice the bears in action, predicting a major correction to BTC, some even saying it is worthless. By reading a mixture of views you should be able to form your own opinion. But form your own opinion you must, there are too many vested interests to be guided by a biased post or 'expert'.

Where do you find information on the top ten coins?

There are no independent brokerages providing unbiased research. Not yet anyway. This could all change tomorrow. However the message is in order to invest in the crypto market you have to get your hands dirty. You have to do your own leg work, that means your own research. That is the only way I am afraid. If leg work is not your thing then this market probably isn't for you.

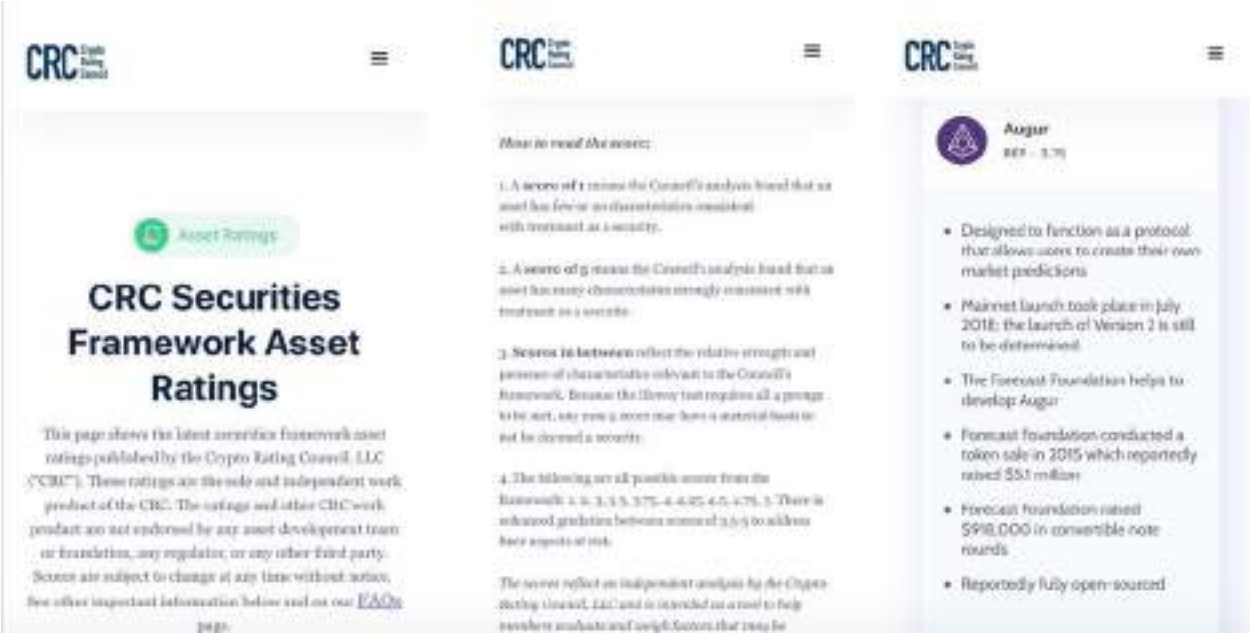
But let's assume for now, you don't mind going that extra mile to identify a 'solid' investment opportunity. There are a few useful resources which we have outlined below which will help you achieve that goal:

Social media platforms — a very valuable source of information. Twitter and Reddit are the main ones, there is another called Discord. Remember though these generally contain biased views from people with a vested interest. But you can get a feel for what is going on and there are some well respected people worth following. Again remember they also have their own vested interests too, so use them only to get a feel for the market rather than invest in their recommendations.

Crypto Rating Council (CRC) — There is a useful resource available called CRC. This is a great way to start your research on any coin. Their real purpose is to provide an opinion on whether

certain coins represent a security or not. In order to do this, they rate them. BTC for instance is rated a 1, as in it is not considered a security, whilst XRP scores a 4, as in it is likely to be classified as a security.

See scoring below:



There are currently only 28 ratings published. That is a help for sure. You don't want to be investing/speculating in anything that is rated above a 2. But these ratings still don't tell you much about the projects/coins prospects and whether the coin represents a good buying opportunity or are a raging sell.

The reason why we didn't include XRP as a blue chip coin is that the CRC rates it as a 4, which means it could be a security. By buying this coin you run the risk that at some point the coin could become worthless overnight.

Research websites — There are a few subscription websites that charge you a monthly fee for research on BTC and a few altcoins as well as general crypto market news. I would avoid these.

You can gather the same information from a few of the other resources which I will provide you below.

Cryptocurrency news sites — There are a few worth subscribing too which send daily free newsletters, including:

- Cointelegraph
- The Block
- Messari
- CoinSnacks

Binance

One of the leading cryptocurrency exchanges, provides a research resource on its website which covers a large number of projects including a deep dive. It however provides research on its own coin, BNB, and other vested interests, which kind of breaks all the rules of credibility right there. But it is a good place to look for general market analysis and background information on the majority of coins which you will have an interest in. This isn't a recommendation to use Binance as your exchange of choice by the way. You will have to do your own research in this regard, suffice to say there are pros and cons.

Coin Market Cap — Another invaluable source for information is www.coinmarketcap.com. This provides the market price for most cryptocurrencies including information on volume and a summary on the project. The rule of thumb is, if the coin you are researching is not on this list DO NOT invest. That policy would have avoided taking losses in a few of the big cryptocurrency frauds such as OneCoin.

Medium — This is another great resource for information on the crypto market. There is a subscription to pay to access the plethora of articles but it is a small investment if you are serious about this market. www.medium.com .

A few others…

1. Check out Blockdata.tech although a subscription site it provides some valuable information on over 800 coins. Also, sign up to cryptoresearch.report for general information on the crypto market. In addition, have a look at CoinCodeCap for the development activity of the coin.

Finally, a valuable tool is the Crypto Fear & Greed Index — alternative.me. Basically the higher the greed factor the riskier the market.

The above should provide you with ample information to make that informed investment decision.

Purchasing outside the wild wild west…

There are other alternatives to purchasing/owning BTC or ETH directly. Grayscale is a fund you will probably have come across. They offer investors a chance to invest in both their BTC and ETH trusts. We don't advise you buy shares in these trusts through the market as they are priced at a premium to the underlying coin, but this changes (the average premium is 39% on the BTC trust, and is now around 22%). Currently there is no regulated ETF (Exchange Traded Funds), however there are plenty of ETNs (Exchange Traded Notes). ETNs are not obligated to buy the underlying asset so you are running a risk buying these. There have been a few frauds in this area.

Now let's look at something more risky…

High risk opportunities

How do we find the genuine buying opportunities — the gems, the diamonds in the rough?

This is where the big money is and it is also where you will lose your investment — 100 percent of it. But the dilemma is you have over 6,000 coins to choose from.

The problem is the research is scarce. You can find basic information on coins outside the top ten but the depth of information is substantially less. Your main source of information will be the projects website and their white paper (most projects produce a white paper that outlines their business plan. Take a look at the BTC white paper if you haven't already).

So how do we identify this potential money-spinning cryptocurrency? Perhaps you read about an interesting sounding project in one of your newsletters or a few Tweets. Maybe you were inspired by your own thinking about what areas will benefit the most from the introduction of blockchain and then you conducted your own research and found a few interesting coins operating in that

space. However you unearthed the investment doesn't matter, what matters is whether it passes the rigorous checklist we have provided you below:

1. Is the coin listed on www.coinmarketcap.com — if yes, check out the price, volume and basic information, then proceed to step 2. If not, look for another opportunity.

2. Check out the projects/coins white paper. You should find that on the project's website.

3. The white paper is an important document, here are a few key areas to consider:

- Typos are a no go. If someone has produced a document littered with typos and grammatical errors then that is a very bad sign for the future.
- Is a firm of lawyers advising the company launching the coin? Check them out, are they reputable?
- Who are the advisors? Are they reputable? Feel free to call them up.
- Check out the team, Google their profiles and their LinkedIn profiles. Do they stack up? Have they had experience in this field? Have they run successful tech businesses before?
- Has the project received venture capital from respected VCs?
- Are they on schedule with their launch of their product/coin? If the product has missed crucial launch dates, this is a major warning sign.
- How many coins have the management awarded themselves? Too generous — avoid.

4. Check for online comments — essential!

5. Check to see if the CRC has rated the coin. If they haven't, check online for general comments. If in doubt steer clear.

6. Check out the coin on deadcoins.com. This has a list of scam coins, dormant coins and other coins to avoid.

Below are some additional resources to help you reveal that potential hidden gem.

Coin List

www.coinlist.co is a valuable resource to check out forthcoming and current coin offerings. Called ICOs or IEOs. It is a valuable guide to the new issues and information on each of the projects including the projects white paper.

What is an ICO and an IEO?

An ICO is an initial coin offering, similar to an IPO, this is an issue of new coins. These were all the rage a few years ago, but have died a death for three reasons, one, the market crashed, two, most of them were frauds and three, many of them were classed as securities. But there are a few still emerging that may offer buying opportunities for investors. But you must follow the checklist above to ensure that these are not scams or have no hope of ever achieving their objectives.

The hot area right now — DeFi

www.defipulse.com has a list of all the tokens in decentralized finance. This is the hottest area in cryptocurrency right now. Many participants are speculating on what are called governance tokens which relate to many of the DeFi apps. Before speculating in these tokens however take a read of our follow up article.

What is DeFi?

Short for decentralized finance, the most popular area of DeFi right now is the lending/borrowing platforms, where people deposit or lend cryptocurrency in exchange for a payment of interest. The capital is protected through a smart contract (i.e. a legal contract which releases your capital if certain conditions have been met, with no human interference). There are millions pouring into this area of DeFi right now both from VCs and private investors. Our next article will explore this

exciting fast moving area in more detail. This field of DeFi is set to revolutionize the crypto market, and not just for the well informed!

What is your risk tolerance — and how much should you invest?

Finally, let's review the area all financial advisors should ask you about before they start pitching you their latest investment strategy, but always manage to skim over the subject.

Do you have a high, medium, or low tolerance for risk? The answer to that will determine whether you should even be investing in the wild wild west.

According to Benjamin Graham (the author of The Intelligent Investor and a one time mentor to Warren Buffett) only a tiny proportion of investors can be classified as having a high tolerance to risk.

You fit into this category if you pass all these tests:

- Have set aside cash to support your family for at least one year.
- Will be investing steadily for at least twenty years to come.
- Survived the last bear market.
- Did not sell stocks during that bear market.
- Bought more stocks during that bear market.
- Anyone who panicked in the last bear market is going to panic in the next one.

There are other factors to take into account, including your age, the younger you are the more risk you can afford to take on. Your tax position. A pensioner for example is a low-income earner in

need of income but needs a loss like a hole in the head. And your portfolio size. The overriding factor in any investment decision is your risk tolerance.

Let's assume you can afford to take a punt in the cryptocurrency market based on the above criteria, how much do you invest?

There are a few rules with any non mainstream investment (ETFs and Index tracker funds are mainstream).

1. Don't ever touch your pension pot — many have and lived to regret it.
2. Don't remortgage the house! Sounds madness, but people do it.
3. Only use money that you can afford to lose.

Taking the last point in my 3 point list — how much should you invest?

You should only invest a maximum of 5 percent of your portfolio outside your pension and main residence. And out of that 5 percent this should in turn be spread amongst other investment classes — at least 10.

This is the safest way to invest to safeguard your pension and your home. If you are a 23 years old high achiever with money to burn, by all means speculate, but the same rules apply. There are many many stories of people losing their shirts when speculating in high risk investments, from CFDs to cryptocurrency, from growth stocks to the latest overseas property hotspot! Caution is the way to go.

Takeaway

What can we take away from this chapter?

- ☑ Decide whether you are a long term investor or looking to make a quick killing.
- ☑ Whatever your strategy you must perform your own research bearing in mind the many inherent biases in the marketplace.

- ☑ Choose a regulated exchange and preferably store your own coins.
- ☑ Work out your storage strategy if you decide to hold your own coins.
- ☑ What is your risk tolerance? Never invest more than a proportion of 5 percent of your portfolio into a high-risk asset class of which this clearly is.

CHAPTER 5

HAS CRYPTOCURRENCY GONE MAINSTREAM?

The latest news that PayPal has entered the cryptocurrency arena was another endorsement for the future of cryptocurrency. Many of the headlines read, 'Cryptocurrency is going Mainstream'. You might be thinking to yourself, they have been saying this for years. And you are correct 'they' have. But considering Bitcoin is only 12 years old they can't have been saying it for too long! In fact, we contend in this article that cryptocurrency is already mainstream. Let us explain why…

The first question we have to ask is what does mainstream actually mean?

'It describes what's viewed by most people in society as 'normal'. Something that is mainstream is conventional.' — Vocabulary.com

Is it 'normal' to own cryptocurrency?

Perhaps that isn't the correct question. Maybe it is not ownership that is important, it is awareness. Apparently, 90% of the US have heard of bitcoin, whilst that number is 93% in the UK and 66% in Europe. If awareness is the measure of an asset going mainstream then bitcoin has arrived.

Some say however that it is not awareness or ownership that matters, what is important is regular usage or as some call it, adoption.

Let us turn our attention to stocks for a moment. I don't think it can be argued that stock as an asset class is not a mainstream asset since over 52% of all Americans own stock in some shape or form.

The actual percentage of American's that own cryptocurrency, or more specifically bitcoin, is a lot harder to predict. The figure varies from 6.2% to 14.4% in various surveys. We think a figure of around 10% is more likely. Obviously, that is way off compared to stock ownership.

Those are the percentages although they are crude estimations, let's now look at the number of users which I warn you are even cruder estimations!

Ownership

Although blockchains are transparent the figures they report do not help our cause. Take bitcoin for example. Many wallets hold zero or de minimis amounts of bitcoin. Also, many people hold multiple wallets. To muddy the waters further it is estimated that 23% of bitcoin are 'lost'. That means that many of the figures we see banded around as to the number of bitcoin owners is misleading, to say the least.

Two figures which seem common among many commentators is a figure of over 54m blockchain wallets as at September 2020 with just over 30.4m addresses with a balance. Estimates of ownership are hugely variable, from 13m to 27m. However, these figures are also fundamentally flawed as they disregard the people who don't have a bitcoin or other cryptocurrency wallet. They bought their cryptocurrency through an exchange that maintains their coins for them in a central wallet. This is when the number of owners starts to expand quickly from these initial estimates.

Let us put these numbers in perspective. Coinbase and Binance, two of the largest exchanges, have 45m users between them (Coinbase 30m and Binance 15m). **Estimates are that including wallets held centrally there are around 100m bitcoin owners.**

Another interesting fact which is relevant here. Did you know that 55.4% of bitcoin owners also invested in another cryptocurrency? That would suggest that the majority of altcoins are owned by people who already hold bitcoin.

On this basis, a figure of over 100m owners of cryptocurrency is a reasonable estimate with the US being the country with the highest cryptocurrency ownership.

Active users

Okay, so that deals with the number of owners of cryptocurrency, albeit in an unsatisfactory way. How about active users? This is another possible metric to measure whether cryptocurrency has already gone mainstream.

There are around 300–500k people using bitcoin every day. Blockchain.info estimates that there are on average 550k active addresses. A number of surveys reveal that only 8% of owners of bitcoin hold the e currency as a payment instrument. These surveys demonstrate that the majority of owners of bitcoin and other cryptocurrencies are long term holders who are possibly buying for 'fear of missing out'. That isn't a good case for mainstream adoption but it is a good case for cryptocurrency and more specifically **bitcoin having reached the point of becoming a mainstream investment.** To prove that point. It is estimated that 11% of the American adult population own gold as an investment compared to a figure of up 14% holding bitcoin.

Has cryptocurrency gone mainstream or not?

From our analysis of all the conflicting data and spurious estimates, we would conclude that bitcoin, in particular, is now a mainstream investment with similar ownership numbers as gold bullion which is a core component of most diversified investment portfolios.

The majority of bitcoin has been purchased through exchanges and is held in a central wallet ultimately controlled by the exchange. This is the perfect solution to overcoming the major obstacle to the mainstream ownership and adoption of cryptocurrency — security and custody. Although it is important that investors buy through regulated and bonded exchanges rather through the many fly by night operations that litter this space.

The near future

What is interesting is that whilst adoption has been slow it is only going to increase with PayPal moving into the market and tapping into its 350 million customers. However, PayPal is joining the likes of Cash App with its 30m customers making waves in the market, eToro with a similar number of customers, and Revolut and Robinhood Crypto with over 13m customers each, all offering cryptocurrency to consumers. PayPal however will make the biggest impact on the adoption of cryptocurrency by allowing people to use their crypto holdings to purchase goods and services.

In addition, Coinbase will introduce a crypto Visa debit card. Now owners have an easy way to utilize their holdings of cryptocurrency to make day to day transactions. It does look like mainstream adoption for bitcoin and a few of the other major altcoins (Ethereum, Bitcoin Cash, and Litecoin are accepted on the PayPal platform) is on their way.

A future driver for adoption is women. Currently only one in ten own cryptocurrencies. However, women are behind 70% of retail spending. As women start to feel comfortable using cryptocurrency in their day to day lives then adoption is really going to take off.

The other side of the cryptocurrency equation

The argument we have been discussing whether cryptocurrency is mainstream or not only takes into account a small segment of the cryptocurrency ecosystem. We have been exploring its ability to store value and as a medium of exchange. But there are other areas of the cryptocurrency market which we have not examined such as the fast-expanding area of decentralized finance or DeFi where decentralized apps offer various cryptocurrency borrowing and lending opportunities and automated exchanges.

Also, there are other DApps that offer gaming, betting and file storage, etc. These DApps are in the early stages of adoption with average daily users of under 7,000 in the DeFi space and 80,000 average daily users for all DApps. Whilst many of these DApps offer exciting albeit risky opportunities they are a long way from going mainstream although we believe they will get there in the end. The direct ownership of cryptocurrency will also become mainstream in years to come but currently, it is still too confusing for the average investor, and the thought of losing all his money because the dog ate his password would put off the most risk-seeking investor.

Risks to mainstream adoption

Everyone talks about scalability as being the main impediment to mainstream adoption. And it is to a certain extent. But with PayPal's work around it really doesn't matter anymore if Ethereum or Bitcoin can only process a dozen or so transactions a second compared to Visa's 56,000. The major risk for adoption is still its volatility. Volatility won't discourage speculators or holders but it will deter people who are using it to pay the bills and buy a coffee. However, in reality, the more people who use cryptocurrency or in this case bitcoin the less volatile the price will become. Long term we don't believe volatility is going to affect bitcoin's adoption.

Other interesting developments

- Bitcoin ETF

The number of American's owning bitcoin could rise dramatically if the Securities Exchange Commission approves a bitcoin-backed Exchange Traded Fund. Although they have rejected all applications to date on the grounds that none of the proposals have demonstrated that 'the bitcoin market is sufficiently resistant to market manipulation'. That day will come. Although the launch of a bitcoin ETF won't affect adoption it will significantly increase the number of people who hold bitcoin as part of their investment portfolio.

- Institutions getting in on the act

Paul Tudor Jones the billionaire hedge fund manager recently described Bitcoin as the 'fastest horse in the race' and he purchased around $180m in bitcoin or 2% of his funds value (estimated at $9bn). This massive purchase was followed by the revelation that Microstrategy, the listed enterprise software company, now holds over $1.1bn of bitcoin. It won't be long before there is a massive inflow of institutional money into bitcoin.

- Facebook's currency

Back in 2019, a lifetime ago in crypto, Facebook announced its own stable coin called Libra. It caused such an uproar that they have quietly continued with the project but without the ballyhoo. Facebook has stated that they will not launch Libra until all necessary approvals have been received. They can't afford their normal approach of 'fail fast' with this hot potato. The introduction of Libra, which has now changed its name to Diem, will further broaden the cryptocurrency market and offer an alternative to the other stable coins, the main one being the very slippery Tether. However despite Facebook's 2.7bn users that doesn't guarantee success. Many exciting projects usually go up in a puff of smoke, Diem could be destined for the same fate.

Exposing the bitcoin myth

It is a generally held view among novice cryptocurrency investors that because bitcoin has a limited supply of only 21 million coins as demand grows supply will be so constrained the price is sure to increase significantly. What these same novice investors fail to realize is that yes there are 21 million bitcoins but these are divisible to 8 decimal points. That means that there are actually 100,000,000 Satoshis in a bitcoin (compare that to 100 cents in a dollar!). On that basis, if one Satoshi was worth say 1 cent a bitcoin would be worth $1m giving a market cap of $18.4tn. That compares to $1.2tn of US currency in circulation. That long-winded explanation should help you understand that 21 million is an ample supply of bitcoins for many lifetimes.

Who protects the interest of the novice investor?

Finally, we have to ask one more question. With all these companies entering the cryptocurrency arena with one objective, to sell as much cryptocurrency as possible, who is going to protect the interests of the consumer?

Taking the purchase of stock as an example — stock is sold mainly on an execution-only basis (i.e. no advice). Stockbrokers are regulated by the SEC which means if they are negligent the consumer is protected. There is no such protection in the case of buying cryptocurrency. Whilst the same risk warnings apply with cryptocurrency as it does with stocks there are significantly more complexities in the cryptocurrency market. Including rampant price manipulation, pump and dump schemes and inflated volumes reported by exchanges. Why do you think the SEC hasn't approved a bitcoin ETF yet?

So, who is there to inform the consumer on the risks, complexities and technicalities of buying cryptocurrency? Or does anyone need to? Can the consumer look out for himself?

These questions will receive different answers depending on who you ask. We believe that the consumer should as a bare minimum do his own research. The many price predictions are from people with a vested interest. The big exchanges are always trying to promote their other range of high risk products. Who can the consumer trust to receive unbiased and up to date information?

A breath of fresh air

Our new service recently launched which we think is worth a close look for the beginner to the cryptocurrency market. Our platform is totally independent of any exchange, holds no cryptocurrency, and has therefore only one motive, to look out for the interest of the consumer. To

help achieve this cause we provide a question and answer service manned by crypto experts not bots where they commit to responding to questions within an hour on anything cryptocurrency-related. Although we are careful not to offer financial advice. We also provide a range of free resources for those wanting to learn more about cryptocurrency. These free resources include online courses, reports, research, and ebooks. CryptoQuestion is a breath of fresh air from the many platforms out there looking to make a fast buck from the uninitiated.

CHAPTER 6

THE INVESTMENT CASE FOR BLOCKCHAIN

There are countless books and articles on blockchain. Why? Because the technology has the potential to disrupt many of the centralized systems we take for granted today. Just a few of the industries that could be transformed by blockchain include; banking, healthcare, property records, finance including alternative methods of paying for products and services (i.e. by utilizing cryptocurrencies), supply chain, voting, file storage, social media, transportation.

Definition of Blockchain

What is the definition of a blockchain? A distributed, decentralized, public ledger. What does that mean exactly? Because being honest when I first read that definition a few years ago I didn't have a clue what that meant and as a result the significance of it all passed me by.

For the experts among us, please bear with us whilst we deal with the meaning of blockchain before we move onto what many of you are here for, how can we make money from this technology…

Why is it called blockchain? It is a 'chain' of 'blocks'. Information is contained in the blocks (such as information on a transaction including date, time and value) which are in turn stored on a public database, called the chain. When a block stores new data it is added to the blockchain. Blockchain consists of multiple blocks strung together. There are actually four types of blockchain.

1. **Public blockchains**—as the name suggests any one can use them.

2. **Private blockchains**—as the name also suggests, one can only join if invited. These are usually used by large corporates for internal purposes and don't usually have a native currency or token.

3. **Hybrid blockchains**—combining an element of centralization and decentralization.

4. **Sidechains**—these run in parallel to a primary blockchain. Entries from the primary blockchain can be linked to and from the sidechain allowing the sidechain to operate independently from the blockchain.

What we are going to be examining here are public blockchains. It is the public blockchains where the action is as far as applications are concerned and of course the investment potential.

What are the Unique Features of Blockchain?

- Improved accuracy by removing human involvement in verification
- Cost reductions by eliminating third party verification
- Decentralization makes it harder to tamper with
- Transactions are secure, private and efficient
- Transparent technology

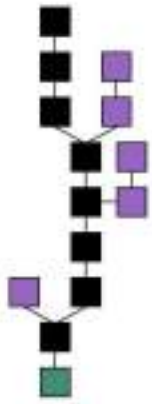
But of course there are disadvantages to using this technology which include:

- Significant technology cost associated with mining
- Low transactions per second
- History of use in illicit activities
- Susceptibility to being hacked

History of Blockchain

Blockchain was first outlined as a concept by two researchers, Stuart Haber and W Scott Stornetta in 1991. However the idea sat dormant until the launch of Bitcoin in 2009. In fact many dismissed the whole idea of Bitcoin as a currency but fell in love with blockchain as a technology and its many potential applications.

Ethereum and Blockchain



Blockchain formation. The main chain (black) consists of the longest series of blocks from the genesis block (green) to the current block. Orphan blocks (purple) exist outside of the main chain.

It was Ethereum that took Blockchain to the next level. Ethereum is an open software platform based on blockchain technology that enables developers to build and deploy decentralized applications. It utilizes Ether to pay for transaction fees and services on the network. That is the fundamental difference with Bitcoin, in that Ether is only used within the Ethereum network, it is not a medium of exchange in the normal sense of the term. It was Ethereum who implemented the idea of the smart contract and provided a platform for developers to build what are known as Dapps or decentralized apps.

Of course with most things that are potentially revolutionary—they spawn copy cats. Ethereum's idea of a virtual world computer produced a huge number of imitators. Of course most of the credible imitators tried to differentiate their blockchains in some shape of form from Ethereum. Some of the main differences include:

- Specialization in a particular type of application such as entertainment (TRON) gambling, gaming, marketplace, supply chain management or tokenization for instance.
- Speed—Ethereum processes transactions at the speed of 20 per second compared to TRON 2,000 and EOS 4,000.
- Cost—the cost of processing transactions can be relatively high on Ethereum—other blockchains are looking to undercut them—median transaction fees stand at $3 on Ethereum, TRON is far cheaper, other blockchains have minimal or zero transaction costs.
- Different mining algorithms.

The Network Effect

Ethereum has one significant advantage—the network effect. In plain English that translates to Ethereum being first out of the block and as a result of its first mover advantage establishing a loyal following of developers who have already built numerous applications on the platform. This

means that future apps developed on Ethereum are likely to be more reliable, quicker and of course cheaper to build. A huge advantage. But that doesn't mean there is not going to be viable competition, there is always room for a number two or three and naturally a few other outliers worth a closer look.

Blockchain for Grown Ups

With over 2,500 Dapps on Ethereum, it has the lion's share of the market. More than 50 percent of the firms included in Forbes are building applications on top of Ethereum. It has to be said that Ethereum are the clear leaders when it comes to startups setting up their blockchain stall.

That lead hasn't stopped IBM trying to attract the larger corporations by joining with the Linux foundation's Hyperledger blockchain project. IBM has helped more than 220 businesses develop applications.

The other notable blue chip entrant into the blockchain arena is JP Morgan's with its Quorum blockchain. Quorum is a copy of the Ethereum blockchain (technically called a fork—we call it a copy). Quorum is being used mainly by banks and is a permissioned blockchain, as in it is not open to everyone.

There are sure to be others offering solutions to corporates however it is significant that both Amazon and Microsoft offer the Ethereum platform as part of their own cloud computing solutions to their clients.

Ethereum is not only credible with both startups and blue chips alike it is also out competing IBM and is likely to continue to do so.

The Pretenders for King of the Dapps

This takes us to the more interesting part of this article. Who are the players in this market and what projects and cryptocurrencies offer the most potential?

It is no surprise that out of the top ten cryptocurrencies five of these are currencies native to blockchains.

Here are the top five blockchain companies by market cap:

Ethereum

Ticker: ETH

Rank: 2

Market cap: $149bn

Ethereum is way ahead of the crowd with over 100 well known companies in the Ethereum enterprise alliance, its dominant market position in the DeFi scene and with its large number of active Ethereum Dapps. The question is can they be caught and even if they can be is that even a relevant question? As they continue to take a large chunk of this ever expanding market.

Ripple

Ticker: XRP

Rank: 4

Market Cap: $13.0bn

Ripple is now working with more than 300 financial institutions including American Express and Santander. However the SEC have filed an action against it stating that tokens were allegedly sold as unregistered securities. The reality is the SEC action is a major cloud over Ripple. As a project however it certainly has potential having already created a very lucrative niche.

Bitcoin Cash

Ticker: BCH

Rank: 6

Market Cap: $7bn

BCH was formed from a Bitcoin fork with the main advantage of faster transaction processing speeds. With its Simple Ledger Protocol (SLP) supporting ERC20 style tokens but with lower fees it has established its own growth engine. There are now over 10,000 SLP tokens, there are also nearly 1m transactions. SLP development is bringing DeFi to BCH. The SLP token is certainly going to drive growth in this blockchain.

Polkadot

Ticker: (DOT)

Rank: 7

Market Cap: $5.5bn

Designed to support individual blockchains created by different developers. It also aims to provide interoperability, scalability and security. Having launched only in August 2020 there are already 197 projects in the ecosystem. Polkadot does not directly compete with Ethereum which is a big bonus. Many people have already realized the potential of its DOT token, the price having risen substantially since listing on Binance.

Binance

Ticker: BNB

Rank: 8

Market Cap: $5.1bn

Binance is new to this market. It launched the Binance Chain in April 2019. Whilst BNB is a currency which was created so that customers of Binance could benefit from discounts on trading and other services it is now part of the Binance Chain infrastructure. Binance Chain should gain traction as it is able to benefit from its fundraising prowess which is likely to attract DeFi protocols and other Dapps to the chain. However we believe that Binance is built on sand and isn't going to be part of the crypto landscape in the long term unless it makes drastic changes to its structure.

Top 3 Blockchains by Volume

Whilst there are blockchains with a higher market cap than TRON and EOS it is Etherum, TRON and EOS, in that order, that control 98% of the Dapp volume. Let's look at these two contenders in a little more detail.

EOS

Ticker: EOS

Rank:16

Market cap:$2.7

It appears that the number of Dapp users on EOS has crashed from a year ago. This is likely due to a few of EOS' leading Dapps leaving the platform for a competitor (WAX). There is also a class action lawsuit over its $4bn ICO.

TRON

Ticker: TRX

Rank:18

Market cap: $2.1bn

A serious contender, although originally set up to specialize in 'Entertainment.' Well financed and on a mission to go after Ethereum's title. They have recently launched JustSwap a copy of Ethereum's UniSwap which shows their determination to make inroads into the DeFi market dominated by Ethereum. Transaction costs are substantially lower than ETH and transaction speeds substantially higher. The popular WINK gaming ecosystem also resides on this platform.

The Outsiders

Many of the blockchain outsiders, as you will see, have positioned themselves in their own niches, on that basis they are not competing with Ethereum and are potentially carving out their own markets which will no doubt bring its own competition.

Cardano

Ticker: ADA

Rank: 8

Market cap: $5.32bn

Aims to compete with Ethereum. Finally launched in August 2020 they predict that in 2021 there will be 'thousands of Dapps' on the platform. Currently there are few. There is a lot of hype surrounding this project and the team behind it. Hype doesn't buy the groceries!

Tezos

Ticker: XTZ

Rank: 19

Market cap: $1.6bn

Styles itself as a self amending cryptographic ledger utilizing proof of stake. It has emerged as a favorite cryptocurrency and blockchain for tokenized security and real estate tokens. BTG Pactual, Latin America's largest investment bank announced that it plans to use the Tezos blockchain for security token offerings. They have created a lucrative niche by focusing on this exciting tokenization market.

NEO

Ticker: NEO

Rank: 25

Market cap: $1.1bn

Focuses on crypto trading, digital identity and smart contracts. Similar to Ethereum but is able to support a lot of common programming languages. NEO also integrates many other cryptocurrencies into its network. It is often described as the Chinese Ethereum. Regulatory compliance on the system is far stronger than many other systems, with identification requiring verification. Its focus on the huge Chinese market which has embraced blockchain could make this an attractive token to tuck away for the future.

Stellar

Ticker: XLM

Rank: 12

Market cap: $3.27bn

Is an open network that allows money to be moved and stored. Its priorities are to help financial firms connect with one another through blockchain allowing money to move quickly reliably and at almost no cost. Stellar has taken on a string of partnerships with some of the biggest companies in tech and finance including IBM, Stripe and Deloitte as well as at least a dozen payment processors and financial institutions in Europe and Asia. Like a few of the other blockchains it has cleverly utilized blockchain technology to build its own attractive niche.

COSMOS

Ticker: ATOM

Rank: 26

Market cap: $1.1bn

An Ethereum rival. Heralded as an ‘internet of blockchains’ by its founders it aims to create a network of crypto networks united by open source tools. It launched in 2019 and already there are over 100 different Dapps built on the Cosmos ecosystem. In our view Cosmos is one of the most exciting projects out there.

VeChain

Ticker: VET

Rank: 23

Market cap: $1.24bn

An enterprise blockchain which was a fork of the Ethereum codebase. It has an emphasis on the Internet of Things and supply chains for secure product lifecycle management. Since April 2020 the transaction volume has increased by 1,000%. Despote emerging from Ethereum it has created its own distinct market.

IOTA

Ticker: MIOTA

Rank: 35

Market cap: $863m

Is a cryptocurrency established to allow data exchange between any data recording machine as part of the Internet of Things. IOTA doesn't use a blockchain in fact. Instead it enables a different type of system of web connections. The project seems to have a number of problems including security, when they were forced to shut off one of their nodes for 12 days after an attack. It has recently deployed an upgrade to its network which will allow it to process transactions faster. But at the moment the technology and the business model is unproven to warrant such a high valuation.

Avalanche

Ticker: AVAX

Rank: 71

Market cap: $229m

The avalanche mainnet recently went live and its currency was recently listed on Binance. Many believe Avalanche will be a 'next generation' blockchain. It is also billed as being able 'to deliver at the scale DeFi demands'. It is too early to say whether Avalanche will be a significant player in the future DeFi market which is sure to grow exponentially. The market cap is somewhat misleading as there is a maximum of 360m tokens that will be issued with a future fully diluted market cap of $1.6bn, so this isn't the 'bargain' it appears at first glance.

Aeternity

Ticker: AE

Rank: 194

Market cap: $32m

Aeternity is a blockchain network which hosts smart contracts and Dapps off the main network which allows its own chain to run faster. There are currently only a few Dapps using the platform and for some reason it doesn't seem to be receiving the same publicity as some of the more popular platforms, although its technology is arguably stronger.

POA network

Ticker: POA

Rank: 753

Market cap: $5.3m

A Ethereum based public network which bills itself as an autonomous network secured by a group of trusted validators. POA network is supported by a large selection of wallets. The project appears

an interesting one with some eye-catching partnerships with the likes of Compound, MakerDAO and Bancor.

Rootstock RSK

Ticker: RBTC

Rank: 471

Market cap: $14.4m

Billed as one of the most important projects currently in crypto. Using Rootstock allows users to create and run smart contracts on top of the Bitcoin blockchain. It does appear that adoption has been slow despite the exciting prospects the project holds.

What currencies are worth a closer look?

Ethereum is clearly out in front and unless there is a fallout from its transition to proof of stake then it will continue to build its position in this growing market. The price of its cryptocurrency could increase over time to a $200bn plus currency.

Other cryptocurrencies which we think offer good potential are:

Cosmos—Quick and impressive adoption

Stellar—Secured a powerful lucrative niche

TRON—Ambitious and building a solid platform of Dapps

NEO—Established a niche in the Chinese market for Dapps which could be huge

And a few outsiders worth a closer look…

Rootstock RSK—Great concept, however there is much work to do to gain adoption

Avalanche—Next generation technology which offers potential although the valuation seems to have adoption factored in

Mass market adoption and valuation

The blockchain arena has many participants. The projects we have examined above represent only a fraction of what is out there. A new project emerges every week with a different angle and revolutionary potential. We are certain that there will be an unmentioned killer blockchain that will emerge from nowhere and take the market by storm at some point.

Cosmos in our opinion could be one such chain. But the problem everyone in this sector faces is an old one, getting people to use these Dapps. According to StateoftheDapps.com there are 3,727 Dapps and daily users number only 58,000. We are clearly a long way from mass adoption. And this will only happen as the networks become quicker and the user interfaces easier to operate.

At the moment the market is built for the early adopter or geek. The $35bn valuation of Ethereum, the $2.4bn valuation of TRON and the $2bn valuation of EOS are based on mass adoption, which we are confident will happen in time, but that is the biggest risk facing this market. The lower risk play is to target the projects where mass adoption perhaps isn't an issue, such as the Stellars and Tezos of this world who have already established their niches.

CHAPTER 7

DECENTRALIZED FINANCE

Assuming you are a novice in the crypto market you can be forgiven for having never heard of the acronym DeFi, or not understanding its significance. We are devoting a chapter to the subject because we believe, like many others, that DeFi has the potential to revolutionize the crypto market and lead to its mass adoption by mainstream investors.

DeFi v Centralized Finance

DeFi is an abbreviation for decentralized finance, as opposed to centralized finance which is the system we all use today. Our banks and financial institutions all work on a central basis. Currency is controlled and issued centrally, our investments, savings, deposits and borrowings are likewise managed centrally. Let me provide you with two examples of centralized finance in action.

Cyprus is a great and painful example. When the economic crisis hit Cyprus the local government decided to balance their books by levying depositors, who held bank accounts there, with a 10 percent 'tax'. Totally arbitrary. Everyone had to take the pain for the government's gross incompetence, even the Russian mafia.

Another example, closer to home. If we deposit money with a bank (Bank of America is paying 0.01% on a deposit of less than $2,500) we will earn less than 1 percent interest on our deposit. That compares to the bank lending your money out for multiples of this figure (Bank of America secured small business loans start at 3.5%), you receive none of the upsides. That is the way the system works we are told, there are overheads to cover, wages to pay, incompetent decisions to pay for.

Baby steps towards a decentralized system

The invention of Bitcoin was the first step in the decentralized process. Bitcoin decentralized the issue of money and its storage, however, the system still relies on a centralized system. Without a centralized exchange, it would not be possible to buy and sell bitcoin for cash, or as it is called in the crypto world — fiat. If everything was priced in bitcoin then the need to rely on exchanges would no longer be relevant but that scenario is a long way away — as we shall see shortly, there are a number of partial solutions emerging aimed at reducing the reliance on centralization. One such solution we have covered in this article is called a decentralized exchange.

Trust based systems

However, despite bitcoin's reliance on centralized functions, it is one of the most decentralized coins in existence. Many others, such as the stablecoin Tether for example rely on the honesty of the people managing the project. In other words, people buy USDT (Tether's stablecoin cryptocurrency) and the money is deposited into a bank account. The managers of the coin have control over that bank account and how that money is invested etc. This represents a centralized system working in a decentralized environment. Centralized systems are trust-based. We have to have a certain amount of trust that the banker is not going to run away with our money or pay us a lower return on our savings than we are entitled to. DeFi is a non-trust based system, with some obvious limitations. We will come back to this later to see how this is all made possible, but suffice to say at this stage, **the holy grail is a decentralized system where there is no trust involved.**

Decentralization is made possible by smart contracts

DeFi includes digital assets (as we saw with bitcoin), protocols (these are the different blockchains), Dapps (decentralized apps) built on blockchains and smart contracts. Over the next few years, many many more valuable uses are going to be found for the smart contract. Smart contracts play a central role in the whole DeFi sector.

What is a smart contract?

Here is the technical definition:

The notion of a digital protocol is designed to facilitate, verify, or enforce the terms of an agreement without the need of a third party.

Smart contracts aren't a new concept, the term was first coined back in 1994, however it was not until the arrival of blockchain technology that the protocol's full possibilities came into force. Blockchain smart contracts are useful as they provide parties the ability to conduct rule-based transactions and agreements without the need for third-party intervention.

Here is how they work

Users transfer a token or currency into a digital program that runs code to automatically validate specific conditions. Once reviewed, the smart contract automatically settles whether to transfer the asset to a new party, return to the existing party, or some other combination. There is no human intervention. There is no risk of a bad actor running off with your cash or deciding not to repay your money on time. There are other risks obviously such as an external hack, but that is another story, which we will consider later.

Blockchain and DeFi

The first blockchain was Bitcoin. Ethereum, which is another blockchain-based on a similar architecture to Bitcoin, but with a different purpose, was launched in 2015. The majority of DeFi applications run on Ethereum. Let's take a look at Ethereum and consider its significance in the DeFi space.

Ethereum is a decentralized system, meaning it is not controlled by any single governing entity. It has no central point of failure, as it is being run from thousands of computers around the world, and as a result, can never go offline.

Ethereum v Bitcoin

Bitcoin was the first-ever cryptocurrency and money transfer system, built on and supported by a distributed ledger technology called blockchain. Ethereum took the technology behind Bitcoin and

substantially expanded its capabilities including and most significantly allowing users to create decentralized applications on that particular blockchain.

Given the flexibility and amount of development, the Ethereum platform is the primary choice for most DeFi applications, but it is not the only blockchain platform — for a deeper dive, take a look at Cosmos.

Why is DeFi so important?

DeFi provides users with the opportunity of controlling their own assets thus reducing or even eliminating the need for trust.

There are many applications within the DeFi field. Some, like betting and prediction app Augur, offer huge potential however adoption has been slow. In this article we have focused on the areas which we believe are going to gain mass market adoption at some point and revolutionize the cryptocurrency market.

Open lending protocols

This is a digital money lending platform built on blockchain. Open lending platforms or protocols have become the most popular in the DeFi space. Like a bank, users deposit their money and when someone else borrows the digital assets, they earn interest. The smart contracts dictate the loan terms, connect lenders and borrowers, and are in charge of distributing interest. Due to the transparency of the blockchain and that there are no middlemen, the lender earns higher returns and more clearly understands the risks.

An example

This is how a lending platform works in practice. Let's use the popular lending platform Compound to demonstrate this.

Who and what is Compound?

Compound has been described as the killer app. It is a well-respected operator in this infant marketplace backed by the likes of Coinbase, Bain Capital, and Andreessen Horowitz. It is one of the largest operators in this field and probably the most innovative.

There are a large number of coins that Mr Smith can lend (or borrow). Mr Smith can check out the rates available on both Compound and other similar platforms at https://defirate.com.

In order to lend money to Compound Mr Smith will require both the token he wishes to lend and sufficient Ether to pay for the gas (i,e. the fees related to the transaction). Let us assume for the sake of simplicity, Mr Smith is using an Ethereum wallet (see above), he must therefore connect his wallet to Compound, to begin with. If Mr Smith holds ETH, he may lend any amount of it to Compound (well to the Compound pool anyway), and he will earn interest from his cryptocurrency.

Mr Smith can also use this platform to borrow. For example, if he wanted to borrow ETH he must supply collateral in the form of a particular cryptocurrency which the platform accepts. If Mr Smith has some DAI he could borrow up to 75% of its value in another cryptocurrency. Each asset on Compound has a different collateral factor. Why would Mr Smith want to borrow fiat or another cryptocurrency you may be thinking? Perhaps he doesn't want to sell his cryptocurrency holding as that could crystallize a gain which he would have to pay tax on, so he borrows against his holding so he can buy his wife a new Mercedes.

Another big development is the introduction of governance tokens.

As well as interest, lenders (and borrowers) earn COMP tokens. Every day Compound distributes 2,880 COMP tokens. These can be traded or used to vote in relation to matters related to the protocol. Other protocols have jumped on the bandwagon and are also issuing (new and existing) governance tokens to users as a reward for using their platform.

Why is DeFi going to lead to mass adoption?

Now investors are able to earn interest from their cryptocurrencies. Most commentators have been comparing Bitcoin to gold, going as far as calling it 'digital gold'. Of course gold is a non income producing asset.

Now cryptocurrency has a major advantage over gold. An investor is now able to earn interest from their cryptocurrency holdings. This is a huge plus for owning cryptocurrency with the added bonus of capital protection. At the end of the investment period the capital is returned to the investor intact. There are obviously risks, which we will examine later.

Governance tokens

These currently hold a prominent position in the world of DeFi following the success story of Compound's COMP token. Unlike utility tokens, DeFi governance tokens have an intrinsic value because they earn fees and interest from trading. They also allow the holder to participate in the decision making in relation to the protocol. Government tokens are similar to an ordinary share in the world of the stock market and could be valued in the same way.

The great thing is at the moment lenders and borrowers are being distributed governance tokens which are readily tradable. Effective Interest rates are therefore above the quoted rates as there is the extra benefit of the gifted governance tokens. This factor alone is making this area of DeFi a boom time. However look at this as a bonus, the value and the future are in the lending protocol. This 'giveaway' helps to attract money to the sector — although much of it will be hot money, to begin with, the majority of owners of the COMP token for instance are speculators.

What are the top three protocols right now?

The DeFi lending market exploded when Compound launched in June 2020, quickly rising to the top of the protocols, overtaking the relative veteran Maker who quickly regained their lead.

The current Total Value Locked currently is around $13.3bn (as of January, 2021). The biggest app as of now is Maker, followed by Compound.

What does Total Value Locked (TVL) Mean?

Most DeFi applications require capital to be deposited, often in the form of loan collateral or liquidity in a trading pool — locking up value — the best measure of adoption is TVL.

DeFi is Exploding

The low point was 13 March 2020 when TVL sat at $571 million, today it stands at over $13.0bn. There is further to go.

Practicalities

Let's examine how the user can participate in this market by examining four of the biggest cryptocurrency exchanges. Firstly, In order to take advantage of a DeFi lending platform, you must be able to transfer coins purchased on a central exchange to your own wallet (see Ethereum wallets above). However, some exchanges allow you to access these platforms within their own wallets as you will see below.

Binance

Binance, the largest exchange, has recently entered the market and offers between 5.8% and 12% to lenders. The security of the funds is guaranteed by the exchange. In this case, the minimum to stake is 100 DAI. The 12% relates to staking 100,000 DAI (DAI is worth $1.021). This is a reasonably hassle-free service.

Coinbase

Through the Coinbase wallet, you are now able to lend out your crypto and earn interest on DeFi apps, including Compound of which Coinbase is an investor.

PayPal, Square and Robinhood Crypto

Unfortunately, if you buy cryptocurrency through the above platforms, it is stored by them, and you are unable to take advantage of the DeFi apps at this time.

Poloniex

One of the largest and most popular exchanges in the world, it provides the largest amount of trading in BTC. There are at least eleven DeFi related governance coins now listed on Poloniex which you can trade.

Yield farming — What is it?

This is a new buzz word in the crypto market related to DeFi. It is shorthand for utilizing strategies which involve temporarily transferring crypto to certain DeFi apps to earn its owner more cryptocurrency. Another related term is 'liquidity mining', which is the concept of using

cryptocurrency to provide liquidity to a DeFi app thus earning cryptocurrency in the form of governance tokens. Yearn Finance is the biggest player in this market. It is worth looking into their business model as this has proved very popular and will be copied.

The risks and regulation

Lawyers and analysts say that the apps operating in the DeFi arena are vulnerable to coding bugs and hacks. They also say that most are untested at scale and are unregulated. Critics warn the technology could be the next bubble in the crypto world, similar to the ICO bubble. Britain's FCA told Reuters it regulated some crypto-related activities, looking at them on a case by case basis. Even decentralized platforms may be subject to regulation, it said last year. However, as recently as August 2020, Aave (another popular lending protocol)was granted an Electronic Money Institution licence from the FCA which boosted confidence in their project significantly, their token rose in value by 40% on the day of the announcement.

In the US, Congress hasn't scrutinized DeFi yet. There is also no guidance from the SEC although there are rumblings about whether governance tokens do, in fact, represent a security. The SEC Commissioner said only last week that DeFi 'Is posing game-changing questions…' The fact that these platforms require no ID or KYC is undoubtedly going to lead to intervention at some point, this isn't a situation that will be acceptable to many regulators!

Another risk worth considering is the inherent risk of being invested in cryptocurrency in the first place. If Mr Smith rushes to cash in all his investments because he thinks that he can earn 20% APR by converting his fiat into ETH and lending it to Compound, then he is not just betting on the viability of Compound. He is also betting on the cryptocurrency market. If ETH takes a dive by 50% as it did back in March 2020, then Mr Smith is in trouble. This is definitely a market for investors who understand the risks and manage their risk by only investing a small proportion of their portfolio in the cryptocurrency market.

So with that all said, where do current and future participants in this market stand? As the market expands and its profile rises, there is bound to be regulatory intervention. What form this will take

is not known. The real risk to investors is that their capital, which is secured by way of smart contract, is hacked or god forbid has a bug (such as the failure of YAM when a bug was discovered in its software and the tokens value went from a valuation of $60m to zero in 24 hours). If that disaster occurs within say a Coinbase or Binance wallet, you are probably going to be okay. If it happens outside in the wild wild west through an Ethereum wallet where you have no safety net, this could be a problem. But like everything, this is a new and promising area so some people are surely going to get burnt. Overall, the DeFi lending protocols do appear a valuable development with a large number of viable and well funded and well thought out projects a complete contrast to the ICO craze.

Investors should tread carefully and refer to the checklist in the previous chapter before utilizing any platform or buying any governance coin which is the current speculation craze.

Other DeFi areas

Much of this chapter covered the lending protocols. There are a few other very promising areas which we will consider too.

Stablecoins

We touched on the stablecoin Tether briefly above. The tether coin is minted by a blockchain, however the custody of the fiat, which provides the collateral behind the coin, is centralized. Thus posing a counterparty risk. Tether and similarly structured coins, such as USDC, are called collateralized stablecoins and do not figure in the DeFi equation although you can obviously participate in it by owning these coins.

The second type of stablecoin, and the one we will focus on here, are crypto collateralized stablecoins. These are decentralized stablecoins and are backed by crypto assets which form the collateral behind these currencies. They rely on trustless issuance and maintain their 1:1 peg against assets (such as the USD) through various methods, including over-collateralization and incentives.

The trustless issuance makes this type of coin wholly transparent and the reserves auditable. Maker's DAI is such a stablecoin. ETH, the underlying asset here is over collateralized against the loaned DAI. For every DAI, there is $1.50 worth of Ether locked in the MakerDAO smart contract as collateral.

The volatility of the underlying collateral is the biggest threat, a scenario which was played out on Black Thursday on March 12, 2020, after the price of ETH collapsed by about 50% within 24 hours. Maker recorded losses of $6.65m.

Decentralized exchanges

Online centralized exchanges include the likes of Binance and Coinbase, however, as with all centralized systems, there are the risks of solvency, price manipulation, and compromising of the exchanges online wallet. Decentralized exchanges, on the other hand, provide the potential of offering a transparent trading experience.

The definition of a decentralized exchange or DEX is an exchange that offers peer to peer transactions of digital assets between two parties on the blockchain with no third parties involved. The advantage of this approach is that there are no sign-up requirements, identity verification, or any withdrawal fees.

In the last few years, a number of decentralized exchanges have emerged. These marketplaces are in the early stage of adoption and still offer a non-friendly user interface and lack of functionality. DEXs are considered safer than centralized exchanges, in terms of their reduced susceptibility to being hacked. They also offer anonymity which could be a problem with regulators as these become more mainstream. In 2019 EtherDelta, one of the top DEX was forced to close as they did not take their KYC responsibilities seriously. As many of their clients were US-based the SEC came down hard on them. In 2019 $2.4bn was traded through DEXs. Last month $12bn was traded through DEX's, a big jump from the $4.4bn traded in July, mainly as a result of the frenzy to trade in governance tokens.

By far the largest DEX is Uniswap. It allows you to swap ERC20 tokens, as well as ETH to an ERC 20 and vice versa. It is not a replacement for centralized exchanges — a user would need to use a central exchange to convert ETH to fiat.

How decentralized is DeFi really?

The billion-dollar question is, how decentralized are all these DeFi projects.

The common components on a DeFi lending app include custody, price feeds, provision of margin call liquidity, initiation of margin calls, protocol development, and interest rate determination.

MakerDAO and Compound are non-custodial and have permission less initiation of margin calls and provision of margin call liquidity, while the other components are centrally administered.

dYdX (a DEX) possesses the above decentralized qualities with the added advantage that its price feeds are decentralized.

It is worth investigating each protocol to see which centralization elements are present and assessing whether this adds risk or derisks the opportunity. As you can see above custody is a big risk in a very shady market!

Takeaways

- Smart contracts form the basis of DeFi.
- DeFi is a move away from centralization to a decentralized finance system, but there is some way to go to achieve this.
- Lending protocols have the potential to make investing in cryptocurrency attractive to the mass market.
- Investors should base their cryptocurrency purchasing decision on whether they will have access to the best DeFi platforms. Remember certain exchanges don't offer access to these apps.
- Decentralized exchanges have a long way to go before they become user friendly, however they are an area to watch as like lending protocols, they offer attractive benefits to the mass

market, making the whole process of buying and selling more transparent and cutting out the middleman.

- The DeFi apps operate on a new technology, blockchain. It is still unproven and bugs and hacks are likely to occur but that is the price you pay for being early to the party.
- There are always regulatory risks attached to new technologies — there will definitely be some protocols that step on regulators toes. There is also the issue of whether the governance tokens represent a security or not.
- Governance tokens have added an extra gloss to an already attractive market — this has caused a bubble but that shouldn't be a worry as long as investors select the well financed and competent teams behind the best platforms.
- Finally remember that any investment in DeFi is a bet on the viability of cryptocurrency. If you are a believer then lending to a DeFi platform to maximize your investment return is a no brainer, subject to taking the necessary precautions obviously.

CHAPTER 8

MINING FOR GOLD AND OTHER VALUABLE TREASURE WITHOUT A SHOVEL

Last year Steve Wozniak the co-founder of Apple and founder of the cryptocurrency EFFORCE (WOZX) saw the price of his token increase by over 100% in one day. Up until that point most people didn't even know Woz was involved in cryptocurrency. They do now. Woz's cryptocurrency is among a large number of small cap cryptocurrencies with a market cap of under $100m. These cryptocurrencies don't generally receive a great deal of attention. However there is a rung below the small cap cryptocurrencies. The micro caps, where the news flow is in even shorter supply. Here lies the opportunity.

An overview of the cryptocurrency market

There are over 6,000 listed cryptocurrencies. However most of the action is in the top 6 (Bitcoin, Ether, XRP, Tether, Litecoin and Bitcoin Cash). From our own indepth research it is obvious there are huge rewards waiting for those who find the hidden gems among the many long forgotten and overlooked micro cap cryptocurrencies. These are the coins with a market cap of under $3m, representing over 80% of all cryptocurrencies.

High Reward — High Risk

Investing in micro cryptocurrencies is probably one of the most lucrative opportunities out there right now although it is not without risk. Whilst offering the greatest potential of most investment

opportunities it also represents the highest risk. Don't enter this market unless you understand the risks and most importantly you are able to withstand any losses.

A few facts

Here are a few interesting facts about the cryptocurrency market:

- There are over 6,000 listed cryptocurrencies
- There are 30 coins with a market cap of over $1bn
- There are 114 coins with a market cap of over $100m
- 5,000 coins have a market cap of under $1m
- 3,900 coins have a market cap of under $500
- Over 60% of listed cryptocurrencies have a market cap of under $1

Introducing the CryptoQuestion: Micro Cap Watch List

CryptoQuestion has launched the Micro Cap Watch List. This is a list of around twenty micro cap cryptocurrencies that we believe are worth closer attention.

The search

To narrow our search for that hidden treasure we focused on cryptocurrencies with a market cap below $3m with a cut off of $2,000, that provided around 1,100 cryptocurrencies to sift through, no small task.

We were looking for cryptocurrencies that had built a reasonably sized community, where the currency was listed on at least two exchanges, and where the project demonstrated potential. Let's describe what we considered the word potential to mean in this context.

The selection criteria

A project with potential is one where the project is live and has an established user base. In many cases projects have been overshadowed by the bigger brother in the market who have enjoyed all the publicity leaving the potentially promising projects marginalized and languishing at the bottom of the cryptocurrency heap.

The potential rewards

The prices of the cryptocurrencies selected are in many cases a fraction of a cent with market caps ranging from $1.6 million to $2,000. The potential if one of these projects is revalued is huge. Daily increases of 100% plus in the micro cap market are commonplace. **But the reverse is also true.**

Updates

We update the list every Friday adding and taking out cryptocurrencies depending on developments and feedback which will be published on their social media platforms as and when these are merited.

DYOR

Always do your own research. This list does not represent financial advice or a recommendation to buy. It is purely a watch list of cryptocurrencies with potential.

Find out more

To find out more about the CryptoQuestion MicroCap Watch List visit our website www.cryptoquestion.tech watch the introductory video and view the latest Watch List.

CHAPTER 9

A CASE STUDY

DISRUPTING THE DISRUPTERS

Who in the blockchain world could dislodge Amazon from the №1 spot in cloud storage?

The cloud computing market is worth $371 billion. Amazon Web Services (AWS) has 33% of a market growing by 18% per annum. Ripe for disruption you may think. But by who, surely Amazon are the disrupters, who is in the position to disrupt them?

The answer is blockchain file storage services or decentralized file storage as it is technically known.

When the idea was first pitched by blockchain advocates, who suggested that blockchain could improve pretty much anything from file storage to producing better versions of Twitter, Facebook and Uber, excitement was in the air even though it was all talk at that time. One of the areas that held the most potential was file storage. There seemed a real opportunity to disrupt the disruptors.

Let's look at why this was possible and the unique opportunity this represented.

How Amazon Web Services (AWS) works

AWS is a secure cloud services platform offering computing power, database storage and content delivery to help businesses scale and grow. In basic terms it allows you to do the following:

1. Run web and application servers in the cloud to host dynamic websites

2. Securely store all your files on the cloud so you can access them from anywhere

How much does it cost to store data?

The average cost of storing a single TB of file data is $3,351 a year. That cost potentially sky rockets because of supporting technologies. File sharing services we rely on for on the go access is costing companies an average of $450 per user. However the commentators still consider this a substantial saving compared to the previous alternative (i.e.the cost of purchasing and maintaining your own servers, IT manager and staff etc).

What are the advantages and disadvantages of using services like AWS?

Advantages

- Easy to use
- No capacity limits
- It's reliable with 99.9% uptime
- Provides speed and agility
- Secure and reliable
- No upfront cost of purchasing a server and other related equipment

Disadvantages

- AWS charges for immediate support and you can opt for any package among three, starting at $29 per month (developer) up to greater of $15,000 or between 3–10% of the usage costs.
- The cost of storage can become expensive as your storage requirements increase.
- Whilst security is cited as an advantage by AWS in fact the default setting is not to encrypt data 'at rest', i.e. when it is stored.
- AWS has been hacked or data accidentally leaked, so have similar services.

The cloud computing blockchain solution

The beauty of the blockchain is that it allows a decentralized method of storage. What this means in practice is that there is no requirement for a middleman such as AWS. Once the system has been developed then its day to day operation runs independently of a central party. It isn't all decentralized though, the system still requires a central body of developers to modify and update the code and the system.

This is how file storage works in theory using blockchain

Blockchain creates a decentralized and distributed storage marketplace. To do this hosts sell their surplus storage capacity and renters purchase this surplus capacity and upload files. Payments occur over the blockchain where files are broken into fragments after being encrypted and then 'intelligently distributed across dozens of nodes in dozens of countries.'

Advantages of using blockchain as opposed to centralized cloud computing

● With blockchain your data is fully decentralized because it is stored on multiple nodes across the globe. This helps to give you more protection in case of error in storing or transmission.

● It helps users have more privacy because the data and the user files aren't fully controlled by a single third party. Instead encrypted fragments are spread across multiple nodes controlled by keys that the users hold. This means any nodes that hold your data are unable to look at them. Even if the node found a way into the file it is only a partial file so the data is not compromised.

● Decentralized platforms don't require the large infrastructure investment enabling both the company and the end user to save money.

The decentralized storage players

Below is a comprehensive list of the decentralized storage projects. Most have a native cryptocurrency you can trade, some are private or VC funded so you are unable to participate in their success.

The originals

The originals are the projects that received the majority of the headlines in the decentralized storage space when people realized the potential of blockchain to disrupt this market.

Filecoin (FIL)

Status: Launched October 2020

Listed: Yes, you can trade their Futures.

Market Cap: There is no listed market cap, however, based on an ultimate supply of 1.95bn coins that is an implied market cap of $40bn.

In 2017 Filecoin broke ICO records raising $257m from accredited investors. 3 years later they still had no working product. The project's leaders have been selling off tokens that they generously rewarded themselves with at the time of the ICO. Filecoin is led by a respected team and has an A-list of VC's backing it. It is now down to Filecoin to disprove their many doubters.

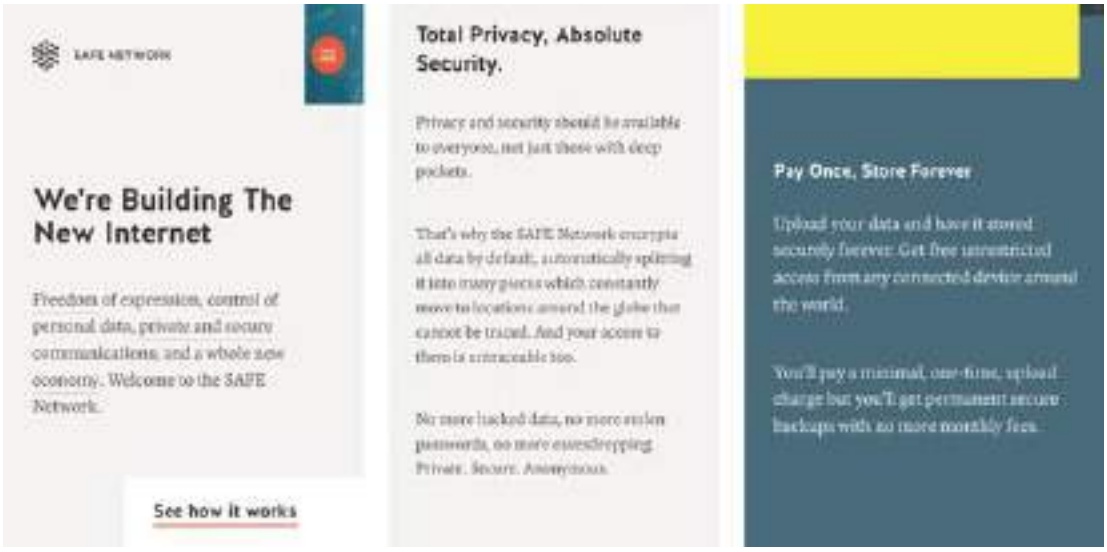
Maidsafe (MAID)

Status: In beta phase i.e. tested among a few trusted clients.

Listed: Yes

Market Cap: $128m

MaidSafeCoin is the decentralized currency for the SAFE Network.

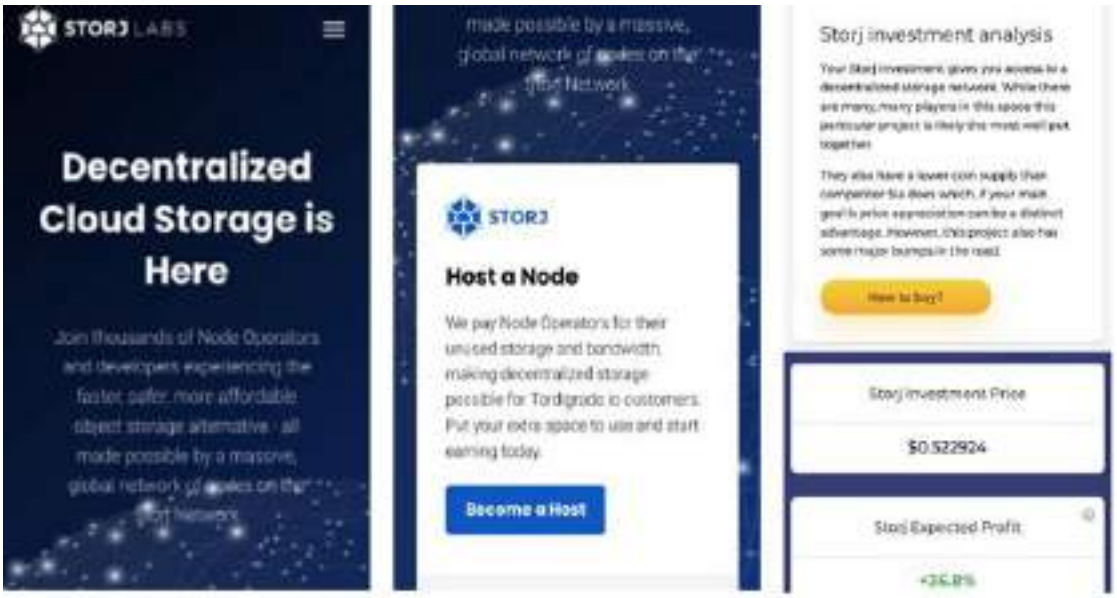


Storj (STORJ)

Status: 20,000 users on 100,000 distributed nodes

Listed: Yes

Market Cap: $63m



The Newer Entrants

These are the projects that either didn't receive the same media attention as the ones above or were late comers to the party.

Ochain — No listing for its tokens

Transcodium (TNS)

Status: In development

Listed: Yes

Market Cap: $461k

Their market cap of $240,000 compares to the $11m they raised in an ICO

Bonus Cloud — private

iExec (RLC)

Status: In development, close to launch according to their last announcement

Listed: Yes

Market Cap: $60m

Their announcements and the content on their website is a classic example of why many of these projects will fail, they are clouded in smoke and mirrors and technical jargon. Your average startup isn't going to be interested in storing data with such outfits.

Golem (GNT)

Status: Still in development

Listed: Yes

Market Cap: $74m

DADI (rebranded as Edge) (DADI)

Status: In development

Listed: Yes

Market Cap: $3.6m

DFINITY (IOU)

Status: In development

Listed: Yes

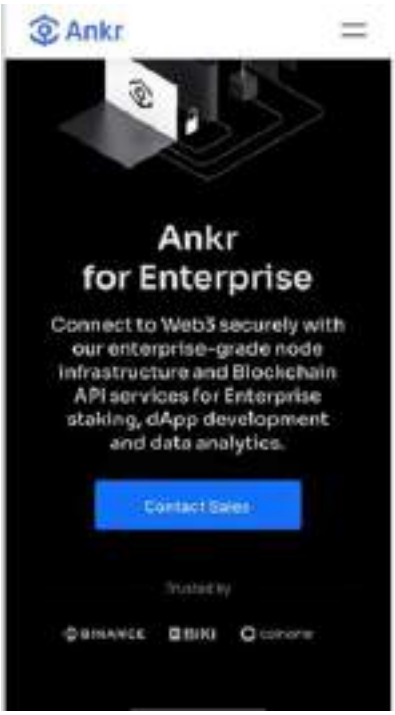
Market Cap: No market cap available

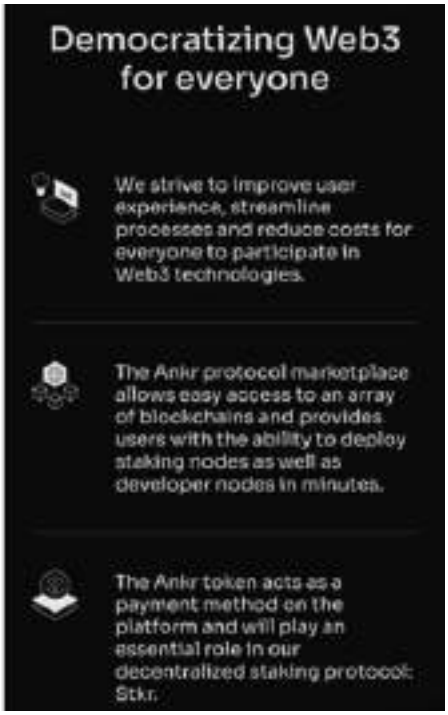
Ankr (ANKR)

Status: In development

Listed: Yes

Market Cap: $55m





Oasis Labs — VC backed

KRAMBU — private

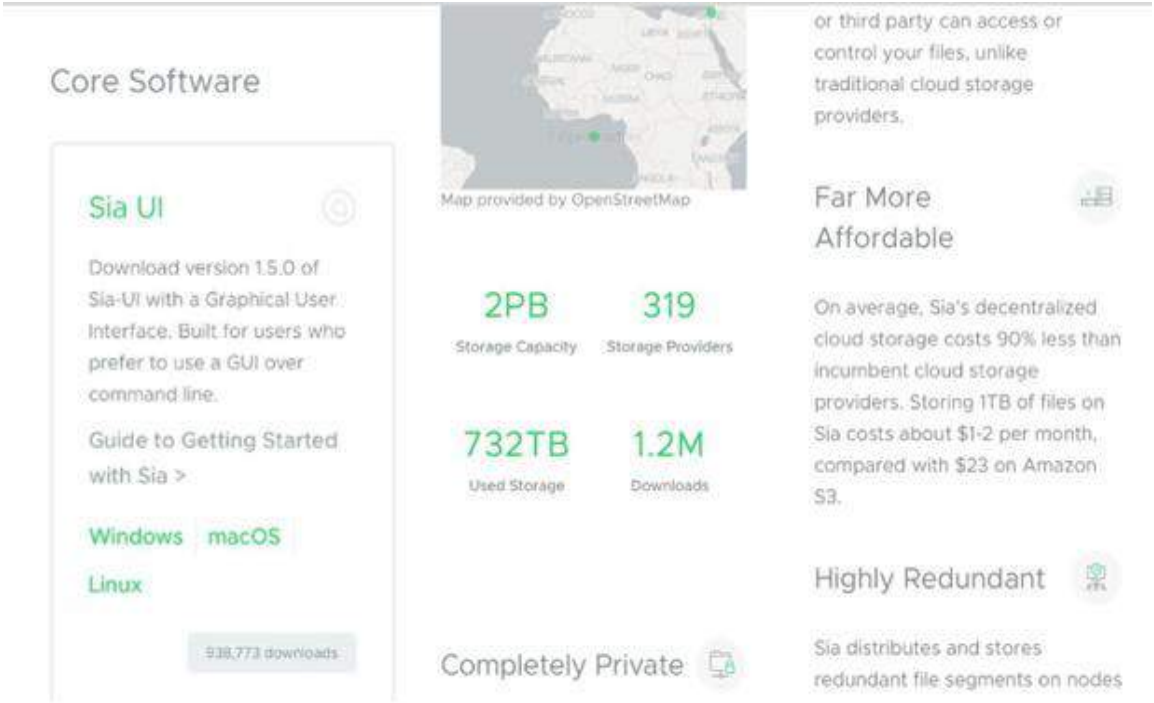
LUMINcx — private

Sia (SC)

Status: Launched

Listed: Yes

Market Cap: $141m



A closer look at the cryptocurrencies that could benefit

Let's extract from the above list the two projects that have launched and are generating revenue, albeit peanuts at the moment. The two projects that have actually done what they said they would are:

- Storj
- SiaCoin

These two projects and their native cryptocurrencies are worth a closer look. Our reservation is the slow adoption. That probably has something to do with how these platforms are being marketed.

You just need to take a look at the websites of some of the operators and see that they cater for the techie rather than the lay person. This has to change. The Sia website is a case in point. However the Storj website is a lot more user friendly. There is some way to go to improve the user friendliness of these platforms to make them more appealing to the user. That has to change before they can start to properly mass market their product.

Storj has 20,000 users which is 2% of Amazon's 1m. But is way out in front of Sia with roughly 330 nodes storing data.

Two other projects worth mentioning, one in a positive way and the other not so, are Maidsafe and Filecoin.

Maidsafe

Although only in beta test phase Maidsafe will probably be the next decentralized file storage project to launch and with a market cap of $138m could be worth a closer look.

Filecoin

A project that could be described as all talk and little action. They have finally launched after three years of fumbling around. However this team does not seem as hungry as the three projects we have outlined above. The project is also priced on the basis they are assured to be one of the top three file storage companies in the world so there is no room for failure and little room for purchasing the currency and expecting a decent return.

Others

Investing in projects that are still in the development stage is high risk and probably not worth your time and energy. That being said there are more advanced and attractive opportunities available if you really want to make money from this sector. Sea, Storj and Maidsafe are your best bets. Saying all that Edge does look like an interesting opportunity, but very risky, considering its earlier stage of development.

Where do we go from here?

Decentralized cloud storage is definitely an area that has the potential to disrupt the established players in the centralized market. However at the moment the blockchain projects are their own worst enemies, involving poor execution, greed, and appalling marketing, This will change however, it always does. You have to ensure you are backing the one or two projects that could take this market by storm remembering there could be an outsider we haven't even mentioned here that will emerge on the scene, without the Filecoin hype, and focus on gaining market share rather than telling everyone about what protocols they are using and other technical mumbo jumbo!

PART TWO

THE CRYPTOCURRENCY ENTREPRENEUR

CHAPTER 10

A LICENCE TO PRINT YOUR OWN MONEY

Everyone, apart from perhaps the Dalai Lama, wants to print their own money. The only thing that stops them is a printing press and the fear of a visit from the US Secret Service. But did you know in a matter of five minutes you can create your own currency?

Of course, we are talking about creating your own cryptocurrency. Surely it can't be that easy, you are thinking unless you are some sort of coding genius? Well, that may have been the case a few years ago but now with many of the blockchains sharing their code on platforms such as Github and with the vast amount of code that has been written since Satoshi Nakamoto released Bitcoin, it is as easy as 1–2–3.

If it is that easy then surely anyone can do it? And if any one can do it then how can these cryptocurrencies have any value? Those are two very good questions which we will examine here as well as exploring how you can go about creating your own currency if you are that way inclined.

Distinction between tokens and coins

Let us make a distinction first between tokens and coins. An important distinction if you want to understand the cryptocurrency minting process. A coin is a crypto asset that has its own blockchain. Bitcoin is a prime example. Tokens on the other hand use another blockchain instead of their own. The most popular example is ERC20 tokens which use the Ethereum blockchain. We will explore the ERC20 token here together with the fast emerging SLP token which is a token issued on the Bitcoin Cash blockchain.

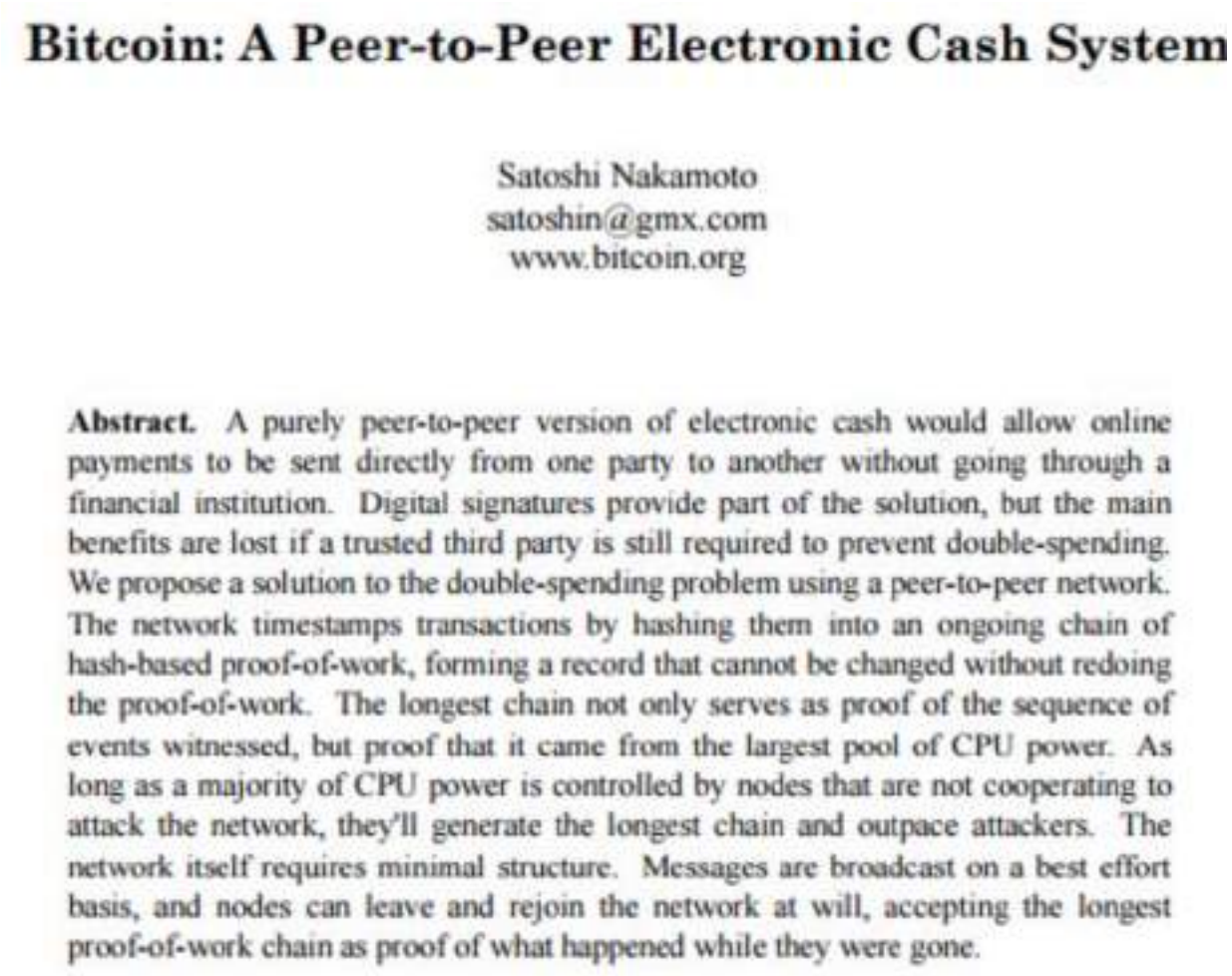
What is your currency going to be used for?

Have you a great business idea for a platform that will benefit from its own native token or currency? As with any business idea launching your own cryptocurrency is no different. You must

first work out if there is a need for your project and follow the typical checks and balances any business idea has to go through to assess its viability.

The white paper and legal considerations

Once you have worked out your business model your next step is to set out your idea in what is called a white paper. Take a look at the Bitcoin white paper here www.bitcoin.org/bitcoin.pdf



Bitcoin: A Peer-to-Peer Electronic Cash System

Satoshi Nakamoto
satoshin@gmx.com
www.bitcoin.org

Abstract. A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone.

The thing to remember is a white paper isn't a prospectus or offering document. Its purpose is to set out the problem you are solving, the solution, and the technology behind the solution. If you want people to give you money for your token, that is a whole different matter. In the early days, cryptocurrency project owners sold their tokens to investors using simply the white paper. The project owner, or more likely the scammer, then used that money to fund their project or buy themselves a boat, or perhaps both. The project owner attracted investors by offering high returns from their token once the project was launched.

The problem was by offering investors a return on their money or selling tokens at a discount to the tokens' eventual listing price made them securities and subject to regulation. Of course, none of these token sales or ICOs (Initial Coin Offerings) were regulated and most were hit with legal action and restitution orders from the Securities Exchange Commission assuming they targeted US investors which most did.

If you are looking to raise money for your project the best thing to do is obtain very good legal advice. You don't want to embark on any crypto venture without making sure you are bulletproof.

A few pointers worth noting in this regard:

- Never issue your tokens at a discount
- Never talk about your token as if it was an investment — no mention of possible returns etc.
- Don't use the word investors, they are not investors they are users of your service
- It is advisable that you only issue tokens to users (not investors) once the project is complete. If the money from the token sale is used to fund the project's development your token is likely to be viewed as a security.

Choices

It is always good to have a choice. You have two possible routes you can take when deciding how you wish to create your new cryptocurrency or 'shitcoin' as the crypto community will refer to it.

Choice #1: You can build your own blockchain and create a coin that utilizes that blockchain.

Choice #2: You can mint your own coin on another blockchain such as Ethereum by creating your own ERC20 tokens.

Your decision as to which choice to take will depend on your budget. Perhaps you are on a tight budget and want to test your idea first? Maybe you want to get to market fast. Or perhaps you want to issue your own currency for a few laughs with your buddies.

The first option can be expensive. Creating your own blockchain from scratch will require a team of developers. Unless you have deep pockets or are an experienced blockchain developer this probably isn't an option for you. There is a cheaper option. This is called a fork, a technical term for copying someone else's work. If you wanted to create your own blockchain on the cheap you would copy an existing blockchain such as Litecoin, where its code is open source, and perhaps make a few adjustments to mold it to your unique requirements. This second option is by far the cheapest but again unless you are a professional coder you will require some help.

The cheapest route to printing your own money is the token. Here you literally enter a few details into a customized program and hey presto you have your own token. Maintaining the token may require a developer's help but that is a small price to pay to have your own currency.

Is there value in these easy to create tokens?

That is the billion-dollar question! Let's say you wanted to create a clone of Tether's stable coin. Their token (although it is called a stable coin technically it is a stable token) is called a Tether. These are issued as ERC20 tokens on Ethereum (and a few other blockchains such as EOS, Tron and BCH) which are supposedly backed on a 1:1 basis with the US dollar. Because these tokens are backed by fiat they obviously have a value. An opportunist could replicate the Tether in 5 minutes with the extra step of having to open a bank account in which to deposit the billions of dollars that could flow your way (not as easy as it sounds as many banks refuse to conduct business with cryptocurrency related projects).

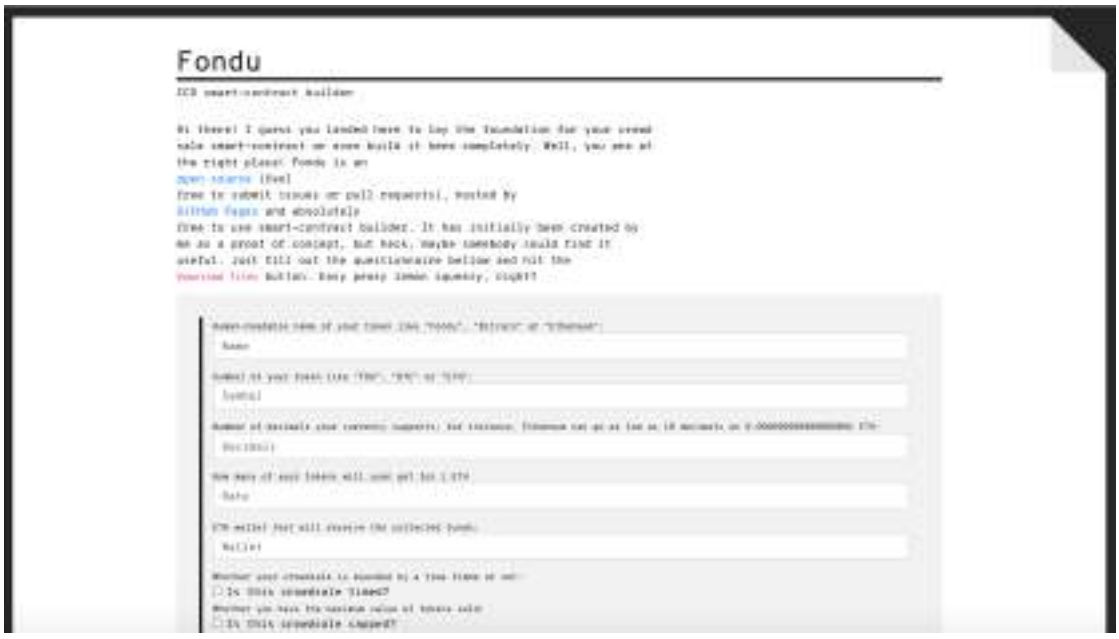
Perhaps your token represents a real asset such as gold or a share of real estate. Again the token would have an intrinsic value. Others use tokens to trade in goods or services on their platform, these are called utility tokens and are difficult to value as they are not backed by tangible assets. Their value depends on a number of factors, which are beyond the remit of this article, but include; how popular the platform is, the number of repeat users and the desirability of the good or service etc. Before buying these tokens as an investment it is advisable to do your own research (DYOR).

How to create your own cryptocurrency

Here we are going to focus on minting your own token. This is the quickest process to creating your own currency, an opportunity that is open to the vast majority of us.

There are a few platforms that make this job simple. Although the word simple is relative!

You can create your own ERC20 token in minutes by using one of these platforms www.walletbuilders.com and www.fondu.io with a few clicks of your mouse you can set your own token up in seconds with no help. Of course if you require some assistance you can always pay a developer for a few hours of his or her time. You can find developers on sites such as www.codementor.io



As I mentioned earlier there are many alternatives to ERC20 tokens. Most blockchains have an alternative (other popular ones are EOS and Tron). SLP tokens are proving popular right now. These are native to Bitcoin Cash which as the name suggested was a fork from the original Bitcoin blockchain.

You can set your own SLP token up quickly using www.simpleledger.cash/project/electron-cash-slp-edition

Of course, as the investors in the fraudulent cryptocurrency OneCoin found out to their cost a token or coin has zero value if it can't be traded. That is your next job on the cryptocurrency journey. Get your token listed on one or more exchanges and then market it like crazy. These subjects will be the subject of our next two articles.

Conclusion

So is creating your own cryptocurrency really like printing money? It certainly was in the old days. But things have changed now that the SEC has clamped down hard on ICOs. The shrewd operators who continue to print money are the stable coin boys. Their business model involves an investor exchanging a token for a $1 bill and then using that $1 to earn a return which the project originator is entitled to keep. When you have $16bn earning 1 percent that is a lot of money!

CHAPTER 11

A SIMPLE GUIDE TO LISTING A CRYPTOCURRENCY

Before we kick off we are going to make a major assumption. The assumption being that you the entrepreneur have developed a sensible cryptocurrency project that meets a genuine *legal* need. As opposed to being only interested in making a fast buck and running off into the hills when the gig is up.

Why is it so important to list your currency on an exchange?

One of the biggest achievements of any blockchain startup is having your coin or token listed on an exchange. Without a listing it is impossible to provide a market and thus determine a value for your coin.

Let's say investors have purchased your token through an ICO (Initial Coin Offering similar to an IPO) but the token fails to obtain a listing on an exchange. What do you think is going to happen next? Well for starters you are going to have a supremely upset group of investors on your hands baying for your blood!

The key to any asset is to be able to determine its value and have the ability to exit your investment at that given price within a reasonable time frame. The word reasonable is relative depending on the asset. The smaller a cryptocurrency's market cap the less liquid and the chances of an investor selling his tokens at the given market price unlikely.

If your token isn't listed then it effectively has no third party making a market in it and hence it has limited or no value. If someone buys your token to use on your platform or DApp

(decentralized app) the user will need to know what that token is worth. This is where exchanges come in.

A little about exchanges

At the last count there were over 390 cryptocurrency exchanges. Exchanges are crudely separated into three tiers. Top tier or large exchanges, medium and small exchanges. Drawing a comparison with the stock market will make this whole system a lot clearer.

Let us say you are considering listing your new internet startup on the stock exchange. Your choice of market will be dictated by a few factors such as, the expected market cap, revenue and user growth both historic and potential and the quality of the board. Let's assume you are the founder of this startup which no one has ever heard of and has zero revenue. Those two facts alone however do not deter you from trying to raise a few million dollars to help you grow your idea into that castle in the sky which you have envisioned. A listing on the New York Stock Exchange however isn't going to be appropriate and engaging with Goldman Sachs as your advisors isn't an option. Your startup is probably destined for the Pink Sheets (the lowest rung of the public markets).

However, if you are Airbnb, for instance, with a multi-billion-dollar valuation, a huge following, and blue-chip backers you are headed to the NYSE or NASDAQ with the assistance of top-flight advisors to manage the process. Listing your cryptocurrency is no different. A cryptocurrency project with a great idea but with a nonexistent following, an unproven team, and limited capital is likely to seek a listing on a small exchange so it can build a track record and liquidity to enable it to migrate to a larger exchange at a future date.

Liquidity is what the larger exchanges are interested in. Ideally, they want your cryptocurrency to bring along a loyal customer base who can also buy their array of products and services. Of course, it is a two-way street. Your coin will also benefit from its exposure to the exchange's own vast customer base. If you are behind a high-profile cryptocurrency with blue-chip VCs and a large community of supporters and users then you are likely to seek a listing with one or more of the larger exchanges such as Coinbase, Binance, Bitfinex, Bittrex, EToro, Kraken, and Changelly. If

you are a startup with no liquidity or trading volume, only a small community and an unformed reputation then exchanges such as Yobit, HotBit, IDEX, Liquid. Digital Price and STEX will be on your wish list.

The professionals

The process of obtaining a listing for your currency isn't a simple case of submitting a white paper and sitting back and counting the money. That was the old days. Now the process follows a similar process to listing your startup company on a stock exchange. That process boils down to the requirement to retain professional advisors who in the crypto field are called ICO Consultants.

The professionals will assemble a package of information on your behalf for submission to the exchange of your choosing. Obviously some behind the scenes conversation would have taken place before the application is submitted, where the chances of a successful application would have been discussed along with the important factor of fees, a subject we will cover shortly. No article on cryptocurrency is complete without a discussion on fees! The package of information will include:

1. Information about the management team of the token issuer
2. The problem that the token solves
3. The technological background and the platform where it is used
4. The utility of the token
5. Current status of the platform and the token
6. Information regarding any independent security audits on the platform
7. Legal opinion about the token and the platform as regards to the jurisdiction it is registered and operates in and the jurisdictions in which the token offering is targeted
8. The white paper
9. Information about any current or potential regulatory action

Crucial to this process is the white paper and the legal opinion. It is essential that you obtain a preliminary legal opinion regarding your project's structure before spending money on its development. Gone are the days of 'fire, aim'. That approach is going to land any excited project owner with IBS and a hole in their pocket when the SEC has finished with them! A few firms worth looking at are List.Help who claim to have assisted numerous projects (over 500) achieve listings, IBC Group and specialist legal advisors such as Blockchain Law Group (these are by no way a recommendation).

What are exchanges looking for in a cryptocurrency?

The exchanges that receive most of the headlines are of course the large ones such as Binance, Coinbase and Bitfinex. Binance has even issued a public document which sets out their requirements before they will consider listing a project. These include:

- Compliance with Anti Money Laundering and Combating the Financing of Terrorism legislation
- The core teams strategic vision to solve real world problems
- The communities abilities to organize in a way that aides the projects development
- Technological feasibility and security

CZ, Binance's founder explained, 'In general we like coins with a proven team, useful product and large user base.'

So that rules out the vast majority of projects that are launched every year. Many of the other larger exchanges also publish their requirements including Coinbase and Bittrex who even go as far as to set out their delisting policy. 'A lack of interest from the community manifested in low trading volumes and lackluster communication.' That demonstrates why as a small project you should be setting up your stall on the smaller exchanges.

Exchanges have realized that bringing strong popular assets to their exchanges is a much better business model than the old one of forcing projects to pay extortionate fees to have their projects listed. However those days have not gone away contrary to popular crypto observer belief — they have just been repackaged…

Costs to play

So what is the cost of all this? Despite what the articles tell you about the system being significantly more transparent than it was a few years ago that is far from the case as we discovered in our own investigations.

Binance states that there are no fixed fees. All listing fees are negotiated individually and any listing fees go to charity.

Coinbase states there are no application fees. In reality, things are a little different. Binance may downplay its fees but Blockstack, whose token is listed on Binance's exchange, revealed that they paid Binance $250,000 as 'a long term payment to keep its token listed on the Binance exchange.' That sounds like a listing fee to us but the woolly wording avoided them donating the fee to charity along with further similar payments that ensured the currency was listed for at least three years.

Binance justified the payment by saying it was Blockstack's idea. We are sure it wasn't Binance's idea to list the currency for nothing! The blockchain Expanse claimed that Binance demanded $2.6m to list its project's token. So unless you are behind the hottest crypto project in town you have to be ready to pay Binance et al an arm and a leg to obtain access to their vast database of clients and liquidity. But who's to say if that arm or leg isn't a price worth paying?

Other than Binance many of the other exchanges are not shy about charging a fee to list on their exchange.

Some of the listing costs from a random selection of exchanges include:

Yobit 3 BTC

CoinExchange 4 BTC

Bitforex from 20 BTC

Coinbene from 25 BTC

Okex from $800,000

Bitrex from $500,000

(Source: List.Help)

These fees obviously exclude the costs of retaining professional advisors and legal advice.

As we mentioned above if you are on a shoestring budget a small exchange would be the way to go but you will still require legal advice and a bullet proof white paper. It can take anywhere from a few days to 60 days for your tokens to be listed from the date the application is submitted. The duration all depends on the quality of your application.

About CoinMarketCap

This is by far the leading price tracking website for crypto assets. If you want your coin to be taken seriously your token must be listed on this site. CoinMarketCap charges 0.5 BTC to list your coin. A price worth paying although their fee paying modelling does undermine their independence somewhat.

Marketing your coin

The next chapter looks at how you go about marketing your coin once you have achieved a listing. The listing is the easy part. The next challenge is drumming up interest in your project and your currency.

Conclusion

Exchanges have the power to decide which coins will thrive and which will die. However, the project owners are also instrumental in determining a coin's success. The path to success with any company or cryptocurrency project is delivering on your promises.

A proven technique is to under promise and over-deliver. The problem with many cryptocurrency projects is they have made over-ambitious promises and have missed repeated deadlines either delivering late or not at all. That means the team's credibility is shot to pieces before they even start which obviously adversely impacts the price of their token. That is why it is wise to issue and list a token only once the project is fully developed. This allows the project team to generate excitement behind both the project and the token launch. This strategy, if implemented effectively, will not only attract users to the platform but will also ensure the token enjoys robust liquidity and a strong token price which is sure to keep the exchanges happy.

CHAPTER 12

HOW TO MARKET YOUR CRYPTOCURRENCY

There is an old saying in insurance, 'Nobody wakes up in the morning and decides they want to buy insurance.' In a similar way, no one wakes up and decides that today is the day they are going to buy an altcoin.

So despite the hours, you have devoted to turning your white paper into a masterpiece I am sorry to inform you but this glorious document will not sell itself. However, the good news is, the hours you spent fact-checking your white paper wasn't in vain.

The secret to marketing is to have an eye-catching product that can stand up to scrutiny. If you have a striking product but on closer inspection, the investor or commentator discovers you have granted yourself an over-generous allocation of tokens or your team has a checkered track record or god forbid the technology doesn't stack up then you are dead in the water. The best marketing in the world isn't going to save you or your project. So it is important before we start this marketing journey together you have dotted all your i's crossed all your t's and your expensive firm of attorneys have signed off on your white paper. The first job before we step onto that promotional path is…

Establish a unique brand

There are two important considerations before we embark on our journey remembering that marketing is all about presentation.

1. Devise a unique identity and usability for your token

2. Design an easy to remember face for your token

Starting at the bottom

We are going to assume that you have no followers and this is a totally new project. The world is your oyster, but with any oyster you have serious work ahead of you. The first lesson we have to remember at this juncture is:

Rule # 1: There are no shortcuts

What does this mean? It means many of us will be tempted to sign up to a discussion forum and without any engagement whatsoever introduce the group to your new project. This kind of behavior is frowned upon. It is best to establish engagement and generate interest around you and your expertise before attempting to promote your project. This applies with all social media channels. That is why this lesson is probably one of the most important. Yes we are all in a hurry to attract users but patience will reap dividends in the long term.

The king of marketing

How many times have you heard people say that email marketing is the most effective form of marketing? Of course, this observation is as useful as a one-legged man in an ass-kicking competition if you have no one to email! But the observation is correct. If you had 1,000 people on your email list you could reasonably expect a 5% conversion rate depending on the quality of your list. Possibly even 10% if your product is a stunner. However, if you had 1,000 followers on Twitter you could expect only 1% to read your Tweet and then possibly 10% of those to engage (the actual figure is usually way lower than this). So your priority from day one is to focus all your media attention on building your email list. If you are banned from Twitter for an inappropriate

post about Sleepy Joe and donkeys there is no long-lasting harm to your business. ‘Own your customers’ is the motto here.

Rule #2: Build an email marketing list

Rule #3: Own your customers

The power of the press release

A good press release can make all the difference between success and failure. One thing it can also do is create the initial momentum which you need in any cryptocurrency project. A slow burn is ann’t much good if you have an ICO you need to sell or users you must attract. There are many press release services out there you can use, some are free. We would advise against using a PR firm. They are usually all talk and no results unless they follow the model of payment per published article which few will accept because they rarely get any results! Writing an impactful press release is an art so if you use a free service you will need to find someone to help you write a great press release.

Rule #4: Issue a great press release

Social media

There are many forms of social media as you know. However some are better than others in terms of the cryptocurrency market. It is understood for example that Facebook isn’t a go to place for

cryptocurrency discussions however saying that there are many large cryptocurrency groups on Facebook you should target. Initially you should set up five social media accounts:

- Twitter
- YouTube
- Facebook
- Instagram
- Reddit

A few tips and observations

Twitter — Crypto Twitter is a must for any crypto enthusiast or project owner. It is advisable to follow the main crypto influencers. See what they are talking about and try to engage in the discussion. If your project and or opinion is interesting enough you may pick up a few of these as

your followers which will in turn make it easier for you to attract their followers. But don't depend on that. The tried and tested route is to post regularly about interesting subjects and engage with your followers. Also search for relevant discussions and participate in these which will help you pick up more followers. Don't ram your sales pitch down your followers throats, social media is all about sharing useful information.

Reddit — This platform is also followed closely by crypto observers. As a new user you should join the main cryptocurrency groups and post regularly to gain credibility. Reddit is a frustrating platform to use with a big brother mentality. If for example you are a member of the Bitcoin group (1.6m members) and you post about your DonkyCoin then it is unlikely your post will be allowed onto the forum. Other groups have different rules which can result in posts being held back.

YouTube — You can create a video or even a series of videos for only a few hundred dollars. This is a must. A video adds credibility to your project. But an important rule emanates from this…

Rule #5: Talk and write in plain English assuming a non-technical audience

There are a few other interesting channels that are worth hitting including BitcoinTalk and Steamit. Both of these have a focused crypto audience which is worth cultivating.

Is social media effective?

The reality is it takes time. It is not as immediate as paying for a Facebook or Google pop up. But it is free and it allows you to build a loyal following who you can communicate with regularly.

Allow 6–12 months to build a decent sized following where your posts will receive attention. Whilst it takes some time it is an essential part of your marketing arsenal.

Rule #6: Integrate your marketing

Become an expert

It is important especially with social media that you become known as an expert in your field. You can obviously do this by posting sensible and valuable content on your various social media channels. The other way to achieve this is by writing regular articles on platforms such as Medium and getting other publications to publish your article both through Medium and directly. This is an effective way to gain recognition and followers as well as building your email database.

Writing articles is one way. We touched on creating videos on your own YouTube channel. You can make this a regular weekly thing if you have regular content to contribute. You can also combine your YouTube content with your own podcast presenting some of the same information. Perhaps including the odd guest. Another way to gain quick traction is to appear as a guest on relevant podcasts — you can find relevant podcasts to appear on through podcast booking services — the biggest of which being Podcast Bookers whose prices start at $500 per month for 2 shows per month to $700 per month for 4 shows per month.

Rule #7: Become an expert in your field

Affiliates

These types of programs allow you to pay a commission to someone if they refer a customer to your service. You can decide on the exact trigger at which point a commission or fee is payable. Realistically it is going to be hard for a startup to attract affiliates but it is something to think about. Another interesting approach you can take if you are approached by firms looking for such an arrangement is to turn the tables on them and suggest a reciprocal arrangement.

Airdrops

These are a great way to bring your project to the attention of an audience. By airdropping free tokens into the wallets of certain tokens or coin holders this will immediately create interest in your project. There is a huge community of people looking for airdrops. By setting aside a small percentage of your coins for an airdrop which you publicize through the various methods we have discussed above this should create a buzz around your coin. It also allows you to establish a user base who now have an interest in the success of your cryptocurrency. It is worth checking with your attorney however to ensure you are not breaching any securities regulations by performing an airdrop.

Other Marketing

Paid for advertising — What we are talking about here is paying for Facebook ads and Google pop ups or PPC (pay per click). These are Facebook words as regards cryptocurrency related advertising, ‘While we will still require people to apply to run ads promoting cryptocurrency, we will narrow this policy to no longer require pre-approval for ads related to blockchain technology,

industry news, education or events related to cryptocurrency.' This probably means an ICO would need to go through an approval process. However we do believe that if you are trying to raise money by advertising on social media this makes your project appear scammy. If however you are looking to attract users then this is a more acceptable form of marketing.

Google had a sweeping ban on all cryptocurrency related advertising however it has relaxed this to allow regulated exchanges to buy ads in the US and Japan. That rules out an ICO or advertising for users.

YouTube is the go to place for educational video, however it seems that many smaller crypto related channels have been purged. We would suggest raising money through paid advertising in general smells of a scam. What would be better is to provide educational video content to attract users to your service.

SEO (Search Engine Optimization) — This will form the backbone to your email marketing strategy. It is important that your website is optimized for SEO. That means the more keywords you use the higher your ranking on google. But it isn't all about the keywords you use on your website. Your SEO ranking improves by setting up and linking to your various social media accounts.

Probably the most important method of improving your SEO ranking is cultivating what are called hyperlinks or links. This basically means your website address being mentioned on another independent website. Links are very important and this will not only attract more people to visit your website but will also boost your ranking on Google. Put simply this allows more people to find you when they either type in your company or project name or a key word that relates closely to you. The more links you have the higher your ranking on Google. And this is why becoming an

expert in your field is so important as it allows you to get you and your company's name and website address onto third party platforms. So start writing!

SMS - Text message marketing is a responsive form of promotion. However again like advertising on social media this really isn't an advisable form of marketing for a project looking to build a great reputation unless you are a scammer of course. Using cell phone numbers as a way of communicating with your clients via Telegram or WhatsApp groups is a way of creating loyalty through regular engagement.

Rule #8: Avoid scammy advertising

Get someone else to do the hard work…

Obviously, you can employ a small team of bloggers and social media experts to do this work for you if you have deep pockets. Alternatively, you can retain a third party agency to do much of the work. The problem here is social media marketing agencies aren't cheap and they don't guarantee results therefore 9 times out of ten you walk away disappointed with the results. Our advice is to keep it all in-house. Why pay someone $2k per month just to manage your Twitter account when you can set aside an hour a day and do it yourself?

Conclusion

There are a few additional rules which we will end with.

Rule #9: Deliver on your promises

This is key to your success. By delivering on your plan and on key milestones your audience and users will have more faith in the validity of your project and your credibility. If you continue to miss milestones and under perform users will simply switch their attention to something else.

Rule #10: Regular public communication

Finally, provide regular updates and progress reports to your audience and users. Even if there's not much to report, engage with your audience anyway. Maybe a new hire, a new joint venture or another exchange listing your token are news items worth reporting. All of these communications increase the loyalty of your followers and your chances of their support when the time comes.