BITCOIN
FOR BEGINNERS

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PREFACE

"I think we're all going to be better off once people start to really understand what's going on. This is one of the best things that's ever happened to us. It's one of the greatest opportunities we've ever had. And so Bitcoin and the decentralization of the world and the opening of the world are going to be terrific for all of us." **—Tim Draper, Billionaire Venture Capitalist**

"The world is changing quickly. Nation-states are behind the curve. And Bitcoin is the sleeping giant that is well-positioned to be the first currency to achieve global reserve status without ever having to engage in conflict." **—Anthony Pompliano, founder of Morgan Creek Digital**

"I think the internet is going to be one of the major forces for reducing the role of government. The one thing that's missing but that will soon be developed is a reliable e-cash." **—Milton Friedman, Nobel Prize winner in economics 1999**

"As the value goes up, heads start to swivel and skeptics begin to soften. Starting a new currency is easy, anyone can do it. The trick is getting people to accept it because it is their use that gives the "money" value." **—Adam B. Levine**

"Cryptocurrency is such a powerful concept that it can almost overturn governments" **—Charlie Lee, creator of Litecoin**

"Bitcoin is a remarkable cryptographic achievement and the ability to create something that is not duplicable in the digital world has enormous value." **—Eric Schmidt, CEO of Google**

A very small portion of the world's population owns Bitcoin or any other cryptocurrency. There are presently 32 million electronic wallets that contain Bitcoin. Some people own more than one wallet so we know for certain that fewer people actually own Bitcoin. That is out of a world population of 7.7 billion people. That translates to less than half of one percent of the world population owns Bitcoin.

There are numerous small companies and driven individuals attempting to create world adoption of Bitcoin as a currency and or as a store of value, not unlike gold. Some are speculators trying to get rich but many are true believers, attempting to bring down the central banks or limit governmental control over currencies. Determined to make the world safer, more honest and more equitable.

Much of the opposition comes from exactly where you would expect. Entities who fear the disruption of their business models or the status quo. Banks, government regulators, stockbrokers, and gold investors. What is not expected is some of the Economists from academia actually loathe Bitcoin and all forms of cryptocurrency. For one college professor, in particular, his use of profanity and the nasty personal attacks he hurls at crypto developers borders on the hysterical.

The media has little understanding of the fundamentals involved and most articles are either superficial or just plain wrong. Bitcoin has been declared dead over 400 times in its eleven-year history. Each one of these pronouncements has been completely wrong. I have

yet to see any so-called analysts do any better than random chance with their predictions. This book is written for the beginner so you can enter the crypto universe without making many of the rookie mistakes. I will say it repeatedly in the following pages, only buy Bitcoin with money you can afford to lose without creating havoc in your life. Do not buy on credit.

While it is strange in the beginning, once you have completed several transactions, it will become second nature. As with all things new, there is a definite learning curve to master to gain confidence in this realm. After reading this book you should be able to take that first step to enter into the cryptocurrency economy. Please start slow. With less than one half of one percent of people actually in the crypto space, you have plenty of time to learn and grow. If you are entering in 2019, you are an early adopter. There is still plenty of time to be ahead of almost everyone. To use an old Latin proverb, "Fortune favors the bold." Good luck to those bold enough to accept this modern-day challenge.

DEDICATION

To my oldest son Brandon for introducing me to the adventure of a lifetime. It has been one hell of a wild ride and I owe it all to his tenacity in forcing me to take a second look.

To my wife, Deanna, for her unwavering support. At one early stage, I was $20,000 down and she said: "I'm betting on you." It gave me the green light to soldier on and we never looked back.

To Scott McAuley for being my tech support at all hours of the day and night as we pioneered this together. I love you, man.

To Peter Bishop, Ph.D. for giving me the analytical skills to ignore the noise while engaging in trend analysis. His seminar on Strategic Foresight is a gift that keeps on giving.

ACKNOWLEDGMENTS

Richard Jacobs

It was Richard Jacobs who generously allowed me to borrow parts from his original work titled "Bitcoin, Ethereum & Blockchain" I also attended the three-day conference he held in Dallas, Texas in February 2018. I had the pleasure of hearing from Tim Draper and other visionaries. Richard is a true pioneer and has opened up this world to literally thousands. I am sincerely grateful for all his help and guidance.

Scott McAuley

It was Scott who helped me open my first crypto account and provided constant tech support as I flailed around in a new world that was confusing and unknown. Scott generously provided the tech know-how to open a door for a Boomer with no technical training, whatsoever. While I struggled against a learning curve that seemed gigantic, he always had my back. He was a guide during those early days of trial and error. Thanks, Scott.

DISCLAIMER

This publication is intended to be used for educational purposes only. No financial advice is being given and no cryptocurrency expert-client relationship is intended to be created by reading this material. The author assumes no liability for any errors or omissions or for how this book or its contents are used or interpreted or for any consequences resulting directly or indirectly from the use of this book. For financial, cryptocurrency, or any other advice, please consult the appropriate expert who is knowledgeable of the cryptocurrency and relevant law in your area.

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TESTIMONIALS

"Bitcoin for Beginners is a fast, entertaining read that puts not only Bitcoin but the broader foundational topics of economics and currencies in context. This book is a great toe in the door of understanding what cryptocurrency is, the economic and technological forces that catalyzed it, and what all this should mean to the reader. If you're new to the world of cryptocurrency, this book is a fantastic primer."

Ross Ahya
Yale University (Economics)
University of Pennsylvania Wharton MBA
former Wall Street investor

"Clay Rawlings has once again demonstrated his ability to capture the essence of a complex subject and made it much easier for the rest of us to understand. *Bitcoin for Beginners* provides an enlightening explanation of how to engage bitcoin and other cryptos- currencies, with the essential caveats that everyone should follow. The future of

exchange is bitcoin and cryptocurrency, and Clay Rawlings has taken many of us to the launchpad of the future."

Robert E. Bencini, MBA
Certified Economic Developer (CEcD)
Economic Futurist and Strategic Foresight/Workforce Development Consultant
Co-Author: *Pardon the Disruption. The Future You Never Saw Coming*

"An honest and fresh assessment of cryptocurrency and its future integration into our society. Although the crypto winter of 2018 and 2019 has not abated, there are many signs of life and technology that promises to deliver on the promise of cryptocurrency for all. Clayton Rawlings demonstrates the patience, know-how, and deep research needed to uncover near-term future opportunities for crypto enthusiasts with his new book. I highly encourage anyone who has even the slightest interest in cryptocurrency, Bitcoin, Ethereum, and other tokens to read it."

Richard Jacobs
America's #1 Authority on Legal Marketing for Ambitious & Respected Attorneys.
Author: "*Secrets of Attorney Marketing Law School Dares Not Teach*"

"Clay is not just a friend, he is a mentor and part of my tribe. Clay approaches technology with passion and an open mind. He consumes technical concepts and is able to translate that information into simple, easy to understand ideas. This book has been written as if you were sitting and talking directly with Clay, in his cadence and syntax. After reading, you will have established the foundation you need to start your quest with Bitcoin and provide a jumping-off point for your new cryptocurrency adventure."

Scott McAuley
President/CEO
Texas Management Group, LLC
www.texmg.com

TABLE OF CONTENTS

About The Author

I received my undergraduate degree in 1977 from the University of Texas. I then graduated from The University of Houston Law School with a JD in 1980. I have been a licensed attorney ever since and have spent my entire 39 years in litigation. I have tried to verdict over 150 cases. Starting as an Assistant District Attorney for Harris County, Texas, I handled everything from auto theft to capital murder. I left the DA's office in 1985 and with my partner, Keith Hampton, we formed Hampton & Rawlings. We started as a criminal defense firm for the first six years. In 1991 I tried my first personal injury case and obtained a jury verdict of $1,061,000. We then spent

the next 28 years focused primarily on obtaining economic justice for the injured and disabled. Since that time, Hampton & Rawlings has recovered many millions of dollars on behalf of our clients. It has been my honor to serve with my partner, Keith Hampton, for 34 years.

I am married to the love of my life and we have raised 5 wonderful children who are all educated and raising families of their own. My oldest son owns a successful barbershop in Santa Monica, California. My youngest daughter won the silver medal in the NCWA finals and was declared an All American. She was the first female wrestler to ever represent The University of Texas. My second youngest daughter serves in an artillery unit in the United States Army. She is presently assigned as a gunner on a multi rocket launcher and her unit was deployed on a forward operating base in Afghanistan.

They were assigned as support for an elite Rangers Unit and she received a combat action badge for her participation on a rescue mission, the particulars of which I cannot make public. I am proud of all my children. I raised

my girls to be warriors. It never occurred to me they would take it literally.

I have always been a thrill-seeker. For that reason, I have been a downhill snow skier, scuba diver (including wreck, cave, and night dives), and skydiver. I flew with the Texas Air Aces and engaged in mock aerial combat at 10,000 feet. I parachuted twice from 13,000 feet. I have played drums in various rock bands since the 1980s.

My wife and I have run with the bulls in Pamplona, Spain three times. Nearly gored twice. We returned to Texas, bruised, bloodied, but head unbowed. It is that same sense of adventure that I take into the crypto world. I first became aware of Bitcoin in July of 2017. It has started me on the adventure of a lifetime.

CHAPTER 1

INTRODUCTION

While Bitcoin was invented in 2009, I did not buy my first coin until July 2017. So, why did I get in? My oldest son, Brandon, owns a barbershop in Santa Monica, California. Many of his clients are tech millionaires out of Silicon Valley. He was paid 1.3 bitcoins for 4 haircuts when Bitcoin was only worth $300. He kept telling me to look into it. Hey, it's my kid. What parent takes financial advice from his kids, right? Wrong! In July of 2017, he calls me and says his $300 worth of haircuts is now worth $3,000. I got my tech friend to bring one of his genius colleagues over to my house to explain blockchain and Bitcoin. For two captivating hours, a tech genius walked me through what cryptocurrency and blockchain are and why this is the start of a revolution, not unlike the advent of the internet. I then hit it hard and never looked back. A life-changing moment. Thanks, son.

I have made many mistakes along the way. Living in Texas, we are used to hearing the phrase, "there are a thousand ways to die in the West." What I have discovered about the Crypto Universe is it really is the Wild West only now "there are ten thousand ways to die in the West." There are enormous amounts of information being published about Bitcoin. Some say it is worthless and only purchased by fools while others declare it will be worth a million dollars within a year. I have followed many analysts and came to the conclusion there are no experts in this area.

Bitcoin is a new asset class and there are no actual "experts" in this field. I wrote this book to help people get the courage to open a small stake in Bitcoin to see if it does become adopted. The rewards, in that case, would be astounding. If it crashes to nothing and disappears, you did not put enough at risk to ruin your life. Keep your investment conservative and your kids still go to college and you do not lose your house. As you come to understand what is happening you will see that the potential upside is worth taking a small risk.

Billions of dollars are being spent to develop and create the infrastructure for Bitcoin to become a currency and/or a store of value. While some claim it will fail for reasons we will go over later on, this kind of institutional money is being spent by steely-eyed realists, bent on creating the future. For me, I am throwing in with the visionaries. That said, each person has to come to their own decision based on what is best for them, given their personal circumstances.

In trying to determine if this is truly a revolution, I am going to cover a number of changes that we have witnessed throughout human history, to provide a backdrop for looking at Bitcoin.

CHAPTER 2

GLOBAL TRANSFORMATIONS: THEISM, HUMANISM, DIGITALISM

Before we can talk about Bitcoin and cryptocurrencies, we need to start at the beginning. No, not 2009 when Satoshi Nakamoto invented Bitcoin and created the blockchain. I mean the beginning. The very beginning! Let's go back 25,000 years to early civilizations. All over the world mankind was consumed with theism. They believed that everything around them was animated and controlled by invisible gods. They had thousands of them. This went on for eons according to the archeological records left behind by ancient people all over the world. Moving forward to 3,400 BC we had the first evidence of written symbols that eventually evolved into written language. Now we had actual records of what was going on. They looked to the gods to fix their problems. The drought was killing the crops, pray for rain. The child was sick, pray for a miracle cure. Bad harvest due to pestilence,

kill a child in human sacrificial rituals to win favor with the gods to have a better harvest next year.

In the 13th century, we had a thing called the Renaissance. The dawn of the age of reason was upon us. Humanism arrived on the scene. People now believed they could solve their own problems using rational thought to manipulate newly uncovered natural laws and science. It did not mean an end to theism, but we now fashioned man-made solutions to the problems that vex mankind. Bad harvest due to drought, irrigate the fields. If God did not bring water to the fields, then man would do it on his own. A child was sick, go to a doctor and take medicine. Mankind now believed it could solve its own problems.

The Renaissance was helped along when the Gutenberg press was invented around 1440. Now information was being disseminated at an accelerated rate that stimulated many discussions and furthered the advancement of science. It was access to information that allowed what had begun in the 1200s to completely transform the world. The speed with which information

(data) could be transferred had a direct relationship with how mankind would progress in all the academic disciplines and commerce as well.

In the 1960s, 70's and 80's we saw the computer for the first time. The computer speaks in a binary language of 1's and 0's. To communicate with a computer, you needed to speak in a digital format. Then in the 1990s the Internet arrived and managed to put a computer in most homes. The digital age was in full bloom. The digitalization of everything around us was occurring in plain sight. We now went from humanism to digitalism.

The soil was now monitored by computers and water brought to each crop in the optimal amount. A digital map could be made to represent the field and sensors would provide constant digital "data" from the field. If your child was injured or sick, a complete digital scan was made of their body and then examined for broken bones or cancer cells. Cholesterol was measured in a lab and statins prescribed to reduce the blood level of lipids.

Crops were genetically modified by gene editing equipment to resist drought and insects. Our entire world is

being described, defined and redefined by digital coding. The surface of our planet was scanned and we now used digital maps on our phones to travel. Paper maps were replaced by GPS. We are now living in the digital age. That does not mean we abandoned theism completely. It is still present and quite important to some. When it comes to curing societal ills, the relentless march of digitalization allows us to search for digital solutions, even to the point of modifying our own genetic code. So, how does this societal transformation into the digital age affect economics?

CHAPTER 3

BRIEF HISTORY OF ECONOMICS

Having looked at the technological transformation that is occurring, now we need to look at the economic change that is occurring in tandem with the march of technology. We start by looking where it all began. Thousands of years ago our hunter-gatherer ancestors engaged in a barter economy. You made a bow, I sewed a pair of moccasins. I needed a bow and you needed footwear. So we traded. It was not long before it occurred to you it took 10 hours to make a proper bow but I could sew a pair of moccasins in an hour. You made a bad trade. Next time I had to trade 10 pairs of moccasins for one bow. And over the years it became more and more refined as trade became more and more prolific. You could trade nuts and berries that had been gathered in exchange for deer meat. It was cumbersome and difficult.

As trade became more refined, it allowed mankind to form tribes that lived in villages and became larger over time. Eventually, the barter system became too cumbersome and inefficient to meet a society's needs. Along came precious metals and gemstones to the rescue. A system of weights and measures arose to allow a uniform system to gauge the new repository of value. It was massively more efficient than trying to value one good or service versus another.

Now everything could be held to a universal standard of value. While it was much improved, animals were being domesticated and our hunter-gatherers had discovered agriculture. This allowed for a much denser human population as small cities were now growing and the needs of commerce were ever-expanding. Gold rocks and loose gemstones would not be efficient enough for the growing needs of commerce.

Coinage to the rescue. Technology provided a new form of currency. Gold and precious metals could be stamped into a uniform coin with a designated value. Commerce could continue to expand with this more

efficient mechanism of value. Currency had finally been born. Coins from the Greek and Roman reigns are still in existence today. Cities continued to grow, transportation improved, roads were made, sea routes were mapped, and city populations skyrocketed. Coins could not keep up. Too heavy, too cumbersome and security was always a problem. What to do?

The paper currency became the solution. Governments all over the world adopted paper notes as a representation of value and used in daily commerce. Why would someone believe a small piece of paper could be worth anything? Because their governments told them it did. Another term for this is Fiat. The paper currency has value because a government declares it has value by regulations. The first known use was in China in 1,000 AD. In the 21st Century, there is no place on Earth where you will not find fiat currency. The US originally had the dollar tied to gold. In 1971 President Nixon uncoupled the US dollar from the gold standard so it is only backed by the US Government's promise to pay.

Cities now have populations in the 10's of millions. Trade is conducted globally by land, sea, and air. Paper fiat currency was no longer able to keep up with world commerce's need for a representation of value. Paper currency, like physical gold, still had a problem with security as well. Large amounts of cash could only be transported by armored trucks with guards. Too cumbersome and too slow.

Banks then converted cash into a digital format and wired money between banks to settle accounts. Credit cards were also wired into the system so purchases could be made on the spot with electronic signals from your credit card to the merchant's bank. Another tech solution to the exponential need for a quick secure store of value. So far so good, except for one flaw. Now that fiat currency was no longer tied to gold reserves physically held in government vaults, any country could print literally infinite amounts of currency to pay their national debts. Some countries were more responsible than others but those that got out of control printed enough money to destroy the value of their currency and their citizens' life

savings right along with it. Look at Venezuela and Zimbabwe in 2018 to see what this looks like.

In 2009 an unknown figure who goes by the moniker "Satoshi Nakamoto" published a paper that gave rise to the original cryptocurrency called "Bitcoin." This was the start of the crypto revolution occurring as we speak. This was the digitalization of currency. What has been happening in every aspect of our modern era had finally reached currency. This is big because governments are about to lose control over monetary policy. No more manipulation by printing money. The culmination of the digital age and a true revolution. A currency (or store of value) that cannot have its value altered by the behavior of any one government.

CHAPTER 4

THE FOURTH INDUSTRIAL REVOLUTION

Whether you refer to it as the Fifth Wave, the Fourth Industrial Revolution, or the Information Explosion; they are all trying to describe the same phenomenon. Societies and mankind do not standstill. We are in a constant state of change. Historically we were not aware of this because it moved very slowly. Before the written word it would be impossible to know what went before. Change is now moving so fast it is obvious to those of us who are aware and will look at the data.

The first Industrial Revolution occurred around 1760 with the invention of the steam engine. People were no longer dependent on animals such as horses and oxen to do the heavy lifting. Steam power allowed for a rising class of industrialists who would then challenge the Monarchy.

The Second Industrial Revolution occurred in the early 1900s with the arrival of electricity, automobiles, and

telephones. This was the first technological disruption. It also gave rise to a massive middle class in Europe and the US. The standard of living for the average person reached new heights. The wealthy class was also increasing in numbers.

The third Industrial Revolution hit in the 1980s. Also called the Information Age, computers ushered in the digital transformation of our world. Microsoft, Amazon, and Facebook became household words, brought into every home by the Internet. Another wave of disruption displaced old industries unable to compete in a fast modern world.

We are now entering the fourth Industrial Revolution. The virtual world has arrived in the second decade of the 21st Century. Artificial Intelligence, 3D printing, quantum computing, and artificial intelligence will once again disrupt our world. The idea that our monetary system is somehow immune to these advancements is absurd. Our currency is about to be disrupted just as every other industry has been for the past 250 years. This transformation will be faster than any before. The time to get in is now as an entirely new generation of millionaires is about to be minted. We are witnessing the largest transfer of wealth in our lifetime. There are some who vehemently disagree with what I have

just said. In making this prediction, I am reminded of what happened to Clifford Stoll.

In 1995 Mr. Stoll declared the developing internet e-commerce to be “baloney.” Stoll said the predictions of the Internet’s benefits to future society were exaggerated and would not amount to much. He also predicted the internet would not replace newspapers. When confronted with his predictions in 2010, Stoll was quoted as saying: "Of my many mistakes, flubs, and howlers, few have been as public as my 1995 howler ... Now, whenever I think I know what's happening, I temper my thoughts: Might be wrong, Cliff ...”

Mr. Stoll, or should I say Dr. Stoll is an astrophysicist speaking about tech and he got it wrong. I am a trial attorney speaking about economics. I will acknowledge upfront, I could be wrong. I do not think I am, but neither did Stoll. Hindsight, as we all know, is 20/20. Only time will tell if I got this right.

CHAPTER 5

FOUR MAIN REQUIREMENTS FOR A CURRENCY

Money is an idea; a social agreement. There are seven basic attributes attributed to a valid currency. For our purposes, we will narrow that to the four most important. To be a valid currency, an item must have the following four properties: scarcity, divisibility, durability, and transferability. It does not matter if we are speaking about gold, gemstones, coinage, dollars, pounds, or Pesos. All world currencies need these qualities to be a legitimate currency. So let's compare Bitcoin with other forms of value to see how it stacks up against the competition.

Scarcity: a finite number of symbols

- Gold – very rare, expensive to mine
- Cash – government constantly printing more - not scarce
- Bitcoin – mathematically limited to 21,000,000

On this parameter, Bitcoin is the clear winner over cash and gold.

Divisibility: the symbols are easily divisible, so you can divide them into smaller and smaller portions

- Gold – difficult to divide
- Cash – easily divided with a printing press
- Bitcoin – divisible to 8 digits

Once again, Bitcoin is the clear winner, by far, on this parameter.

Durability: the symbols can survive the test of time and weather and won't be worn out or disappear

- Gold – will not burn, rust, or rot
- Cash – not durable at all. Will burn, rot, and fade.
- Bitcoin – secure on thousands of hard drives across the entire world

Both gold and Bitcoin score high on this parameter.

Transferability: the symbols can be easily transferred between owners

- Gold – needs to be physically handed over
- Cash – easily transferred by a bank within a country, but expensive to transfer between countries.
- Bitcoin – easily transferred worldwide with low fees.

Once again, Bitcoin is the clear winner on this count.

It is not hard to understand, really. Bitcoin was invented in 2009 after the economic crash of 2008. It was designed to be better than all previous forms of currency or stores of value. The idea that gold, a 5,000year-old system, would be the last word on how to store value is absurd. Just like the crossbow was eventually replaced by the fighter jet, gold is about to be replaced in the digital age for good reason. Bitcoin is far superior in almost every way.

CHAPTER 6

BLOCKCHAIN DEFINED

Blockchain is a shared, distributed ledger that facilitates the process of recording transactions and tracking assets in a network. OK, that was a mouthful. So, what does that mean? A ledger is a listing of who has what. It is basically a list of things. Invented several hundred years ago, a paper ledger would list all the transactions with one side containing deposits, and the other side containing debits. In the digital age, we still use ledgers that are electronic, while still fulfilling the same function as their paper predecessor.

A blockchain is a network meaning thousands of computers are linked in a massive worldwide "network." The network maintains a ledger (accounting of an item) that is shown by all the computers at the same time. It reduces risk and cuts costs for all involved.

The type of ledgers amenable to a blockchain are currency transactions, property ownership (deeds), medical

records, personal identity, smart contracts, stock inventory, etc. Anything a conventional ledger is used for can also be adapted to blockchain technology.

CHAPTER 7

PRIVATE CENTRALIZED LEDGER

Banks and credit card companies would be the best example of a private centralized ledger. When you make a bank deposit, it is recorded in the bank's internal ledger. That lone ledger contains all the account information for all the depositors. You trust the bank when you deposit money that they will safeguard the ledger and keep it private. You and the bank are the only ones who can see your ledger. It is not open for the public to see. You cannot see another depositor's account and they cannot see yours.

The same with credit cards. When you buy something and swipe your card, the credit card company keeps track of your debt on their ledger and that ledger is kept private. For that reason, you must trust the bank and card company to keep accurate records. They have complete control of the ledger. It is a system based on trust because you trust the bank or credit card company to keep an accurate ledger of your debt and holdings.

CHAPTER 8

PUBLIC DISTRIBUTED LEDGER

Bitcoin, for instance, utilizes what is called a distributed ledger to show every single transaction that has ever occurred using Bitcoin. There is no "cash" equivalent of Bitcoin, nor is there physical Bitcoin you can hand to someone. Bitcoins are not "moving from place to place". Nothing is moving – the master ledger is simply being updated with new information. The Bitcoin ledger is distributed, (as are other public blockchains).

This means that an exact copy of its ledger exists on thousands of different computers all around the world. Because Bitcoin's software protocol has a mechanism to check if every ledger holder (full node) agrees that they have the same ledger with all the same transactions in it, there's no way to "take down the network" by attacking a few computers. Destroying one or two or 500 computers would not destroy the network or the ledger, because it is distributed and decentralized over thousands of computers worldwide.

Not only is the ledger distributed over thousands of computers, but it is public. Every transaction appears on the blockchain and cannot be removed. You do not trust an institution such as a bank to keep the ledger accurate. That is done by consensus over thousands of computers. You do not trust individuals or a single entity. The system self regulates, in effect.

CHAPTER 9

PUBLIC VERSUS PRIVATE

From the above descriptions, you can see there are two kinds of ledgers: public and private. A private ledger is one maintained by an institution or government. When you deposit money in a bank it is recorded in a private ledger maintained by the bank. Cryptocurrency, on the other hand, uses a public ledger maintained on the blockchain. If you used block explorer software and look at today's full Bitcoin ledger, you would be able to see every transaction that has ever occurred and calculate/know the previous state(s) of every address. It is a public ledger that is open to all.

This means no government, no nation-state, no single actor has the capacity to take down the Bitcoin network and burn the ledger. The ledger is public, viewable, and distributed worldwide. It is, therefore, a "trustless" system. This is the opposite of a bank with the central private ledger that you "trust" to maintain

accurately. The blockchain system is public and maintains itself without the need to "trust" anyone.

This is a very important distinction and this is the true genius of Satoshi Nakamoto. Private ledgers require trust. When I make my bank deposit or buy something with a credit card I am trusting the bank or credit company to keep an accurate accounting of my transactions. They have total control of the ledger and for that reason, they could be corrupted if someone gets internal control of their ledger. This system is based on trust. That is, you trust the company maintaining the ledger to keep accurate accounting of whatever is being tracked, be it money, property deeds, or credit purchases.

A public ledger is maintained by thousands of computers all over the world keeping a public ledger because all the computers are in agreement as to who has what. No one is in control of the ledger. This is critical for you to understand the revolution that is blockchain. No one is in control. Not a company, a president, a government, bank, etc. Once set up, the blockchain maintains the ledger with the consensus of thousands of computers all independent of one another but geared to maintain the

integrity of the ledger. You do not trust an individual or an organization, or government to maintain the ledger. It maintains itself in such a way it cannot be falsified. It is, therefore, a "trustless" system. We do not trust someone to maintain the records accurately. We trust no one because there is no one in charge.

Bitcoin is being mined by people who have their computers hashing the equations that keep the system running. They are rewarded with Bitcoin each time a block is finished. Once the data is entered on the block it is then accepted by thousands of computers and is then immutable. It cannot be altered or destroyed. The computers are agreeing to a consensus of the transactions. This prevents double selling of Bitcoins. If you tried to send a bitcoin a second time it would be refused because the blockchain consensus is you no longer possess it because it was already sent to someone else.

Bitcoin has no central monetary authority. No one controls it. Each transaction is recorded across thousands of computers worldwide. Unlikely to be hacked, no central authority, no government control.

CHAPTER 10

PROBLEM WITH CURRENT STOCK MARKET

The Stock Market is a centralized institution. When you buy stock, you do not actually own the stock. Your stock holding is maintained on the ledger of your brokerage firm. The brokerage firm has custody of the stock and you "trust" them to keep an accurate ledger of your account holdings. They are keeping track of all their client's accounts. If you rely on a broker, they charge enormous brokerage fees whenever you buy or sell a stock. Your account is also private. The public cannot look at your account holdings out of curiosity.

This is the exact opposite of cryptocurrencies. They are decentralized (maintained over numerous computers all over the world) and trustless. No agency or company is responsible for keeping score. The blockchain keeps the records and they are all public. Anyone is free to see what any wallet is holding at any given time. The

fee for buying and selling Bitcoin, by comparison, is minimal. The Stock Market could use blockchain technology to maintain stock ledgers if they choose to do so. It will put a lot of brokers out of business as they will no longer be able to justify their exorbitant fees.

While all the Bitcoin wallets and transactions are on a public blockchain, the unique ID number for each coin is anonymous. You cannot identify the holder of a given wallet just by looking at the blockchain. This has allowed government office holders to falsely claim criminals cannot be tracked when they use Bitcoin. Law enforcement does have the tools to identify a given wallet holder and all their movements can be tracked on a public ledger. Not so with cash. This is why Bitcoin is a horrible way to commit crimes. You create a public record that can be tracked with every transaction.

Unfortunately, we have politicians and bankers, bent on mischief, who constantly misrepresent and exaggerate the criminal use of cryptocurrencies to evade law enforcement. Cash is still the tool of the trade for criminals. Rarely do they use Bitcoin.

CHAPTER 11

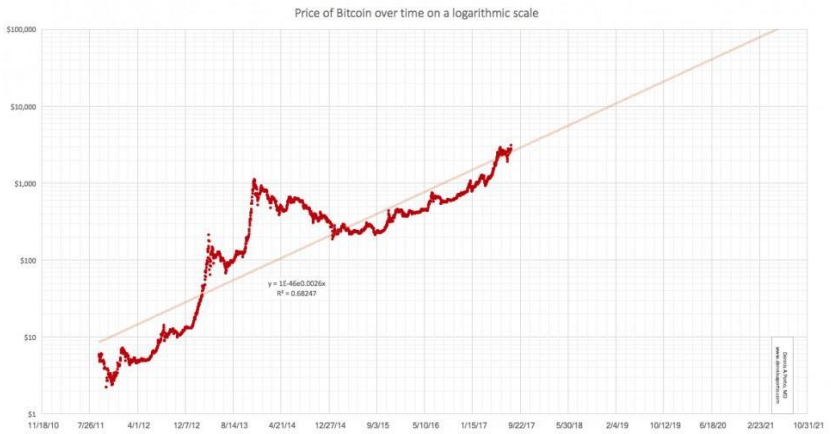
CRYPTOCURRENCY REVOLUTION

Earlier we discussed how the entire world has become digital. This evolution is embodied in what we see happening with currency. Cryptocurrency is an electronic currency. It is not a physical thing. It is a numerical code that has a representation of value. It is quite similar to gold as a store of value and is commonly referred to in the digital universe as digital gold or gold 2.0.

The exponential expansion of technology has seen many disruptions. The invention of the steam engine retired oxen for pulling heavy loads. The arrival of the automobile meant the end of blacksmiths and buggy whips. That is an old story. We have seen weapons go from crossbows to fighter jets. There is no aspect of technology that is immune to this evolutionary disruption. Now the hard part. Money is technology. Earlier we followed the path of money from precious metals and gemstones to coins to paper to credit cards.

Gold was once a currency of its own and people traded it based on weight and used physical scales. While gold disappeared as a regularly used currency, it is still used today as a store of value.

The incredible staying power of gold is it has been around for all of recorded history. It has lasted as a store of value for 5,000 years. Pause for a minute and ask yourself if there is any invention from 5,000 years ago that has not been modified and/or improved. Written letters were used for centuries. The E-mail ended it as a societal norm within 10 years of its arrival. Bitcoin is now being used as a store of value. It is being adopted at an exponential rate just like every modern technology before it.



Dr. Dennis Porto created the above chart that shows the exponential rise of Bitcoin on a logarithmic graph. If this growth continues, by 2021, one Bitcoin will be worth $100,000. There is another way to look at this. If you turn the graph on its side, the descending graph line now represents the descending value of fiat currency.

On May 22, 2010, Laszlo Hanyecz bought two large pizzas worth $30 for 10,000 Bitcoin. At that time Bitcoin was worth .003 cents. In present-day value, 10,000 Bitcoin is worth over $100,000,000. That was one expensive pizza. While fiat currency continues its downward spiral, Bitcoin continues to reach new heights. There is an ongoing debate as to whether Bitcoin is a currency or a store of value or both. Every time I am tempted to buy something with Bitcoin, I keep remembering those pizzas.

We will talk later about the potential upside of Bitcoin. For now, this should serve as a cautionary tale as to what happens if you cash out too soon.

CHAPTER 12

BITCOIN EXPLAINED (SATOSHI NAKAMOTO)

The origins of Bitcoin can be found in a white paper that was published in 2009. The white paper explains how Bitcoin works and it was published to the general public at the same time Bitcoin was created. It was written by an anonymous writer who penned the name "Satoshi Nakamoto." It is still an open question as to who is the real Satoshi Nakamoto although there are several who have come forward of late, claiming to be him.

The white paper was published after the world economic collapse of 2008. A new monetary system was designed that could not be corrupted by any government or business. It would function without being artificially inflated by any agency, institution, or government. It would also do away with expensive fees that are charged by banks. Bitcoin was intended to have a fixed amount that could not be corrupted or inflated so it would maintain a fixed value.

It would also remove banks and their fees and delays from the equation. Suddenly, the average Joe would be in control of his money. The thinking was people should be able to send money to their grandmother in Thailand, without middlemen extorting exorbitant fees, without having to have a bank account, without taking a bus to the local Western Union or Money Gram store, without having to show their ID and sign an affidavit that they're not a terrorist, or using their money to fund crime, without the recipient fearing being robbed outside the store where they pick up the cash.

With crypto, I can send a token from my cell phone in the USA to my kids on spring break in Cancun and it will arrive in seconds on their cell phones. No fees, no banks, no waiting, and it is private unless of course, you spend the time and money to unmask my identity when sending the small sum of money to my kids. It really is the future of money. No other form of currency can do this.

There are two forces that drive value for Bitcoin. The cost of electricity to mine one and the market value based on what someone is willing to pay. The single most

important key to Bitcoin value is SCARCITY. There will never be more than 21 million Bitcoin. It is divisible by 8 digits. One hundred millionth of a Bitcoin is the smallest denomination and is called a Satoshi. That is 0.00000001. Using simple math, if a Satoshi is worth one US penny then 1 Bitcoin is worth $1,000,000.

Presently the entire world's gold supply is valued at seven trillion dollars. If Bitcoin were to replace gold as a store of value, then one Bitcoin would have to be worth $333,333 for the entire number of Bitcoins to total seven trillion dollars.

Every four years the amount of Bitcoin that is created at the completion of each block is cut in half. This occurs due to the code that created Bitcoin. When Bitcoin reaches 21,000,000 the rewards will completely stop and there will be no new Bitcoins created. Presently the reward is 12.5 new Bitcoins created for each block that is completed. That totals approximately 1,800 per day. The next "halving" is predicted to occur on May 20, 2020. The rewards will drop to 900 per day. In the previous halvings, the price of Bitcoin had a parabolic rise. It is classic "supply and demand" economics at play.

The Silk Road was a place on the dark web where you could engage in criminal activity. Drug dealing was rampant and several hits were purchased on the Silk Road resulting in actual murders. The criminals using the Silk Road were paying one another with Bitcoin so in the early stages, Bitcoin became associated with criminal behavior and tax dodging.

The US government eventually put the Silk Road out of business and the inventor was given life without parole in the federal system. The criminals were under the mistaken belief that the transactions were anonymous and untraceable. This was shown to be incorrect as federal law enforcement did, in fact, unmask these people and send them to prison. Bitcoin is actually a bad idea for a crime syndicate because all your transactions are permanently maintained on a public blockchain for all to see and can be traced. The overwhelming majority of drug deals and terrorism still use cash as a way to circumvent the law. Cash, unlike Bitcoin, is truly anonymous and untraceable. Next time someone says Bitcoin should be banned because it can facilitate crime, ask them if they are in favor of banning cash.

CHAPTER 13

ALT COINS

The term "Alt Coin" refers to any cryptocurrency that is not Bitcoin. Bitcoin is the original cryptocurrency. The term alt coin refers to any coin that is not Bitcoin. Alt stands for an alternative coin which is what any coin is that is not Bitcoin. The first two alt coins to appear were Ethereum and Ripple. There are currently over 2,257 coins being tracked by CoinMarketCap.com. I cannot emphasize enough to the beginner that the vast majority of these coins are either scams or designed so poorly that they will not be adopted and will eventually fall to zero. Until you become experienced, do not buy anything below the top 20 or 30.

Once you convert fiat money into Bitcoin you will be able to obtain any of the alt coins. On Coinbase you will also be able to use US dollars to buy Ethereum, Bitcoin Lite, Bitcoin Cash, Steller, EOS and Ripple. In order to buy other alt coins, you need to transfer your Bitcoin or

Ethereum to other exchanges where you can convert them into any of the 2,000 plus coins.

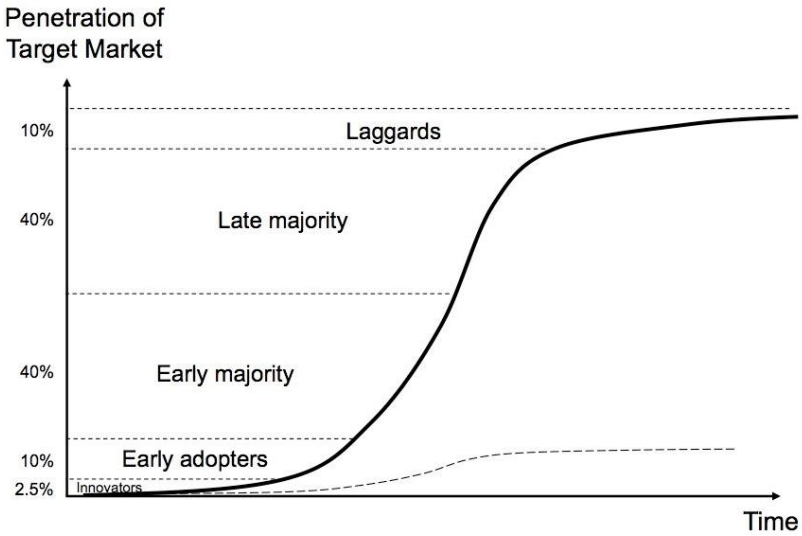
Cryptocurrencies fill several kinds of roles. Some are currency and function as electronic money. Some are stores of value. Some have qualities that render them anonymous and hide the sender and receiver. Others are used to support platforms that have a utility function such as keeping track of property ownership or storing medical records. Some function with what is called proof of work (POW) and others use proof of stake (POS). Bitcoin uses POW and Ethereum uses POS. They have different properties that affect the speed of transactions as well as energy use. Unless you plan on being a developer, you will not need to bother with the distinction.

It is impossible to know if any given coin will survive long term. Bitcoin is the original and oldest coin. It was created in 2009 and is 10 years old. Ethereum was invented five years later and went live in 2014. These coins have a massive infrastructure and their market caps are now worth billions of dollars. Even with all that commitment of funds, there are so-called experts who insist that this technology is a scam and will eventually crash to zero. The reality – this is

new technology and there are no real "experts." It is anyone's guess how this will ultimately play out. That is why I strongly urge beginners to stay away from the outliers. Many will disappear and any money you put into them will be lost, entirely. In June of 2019 when Bitcoin was valued at $8,940.00, it became the 8th largest currency in the world. Larger than Russia. That is still not an assurance that Bitcoin will survive long term. I believe it is some evidence that this is more than a passing fad but only time will tell for sure.

CHAPTER 14

TIME FRAME – S CURVE



The "S Curve" is also known as an adoption curve. It is a known statistical chart that tracks how technology is adopted by society. It is called an "s-curve" because it forms an S when tracked on graphs The "S Curve" is a chart pattern that appears when measuring the adoption rate of numerous things used in society. While mostly associated with modern technology, it can measure the adoption rate of things as mundane as washing machines or microwave ovens, etc.

Bitcoin made it to almost $20,000 in December 2017 without any institutional involvement. In mid-2019 we saw the first signs of institutional involvement as Bitcoin started its third parabolic rise. There are presently 32 million Bitcoin wallets worldwide with a human population of over 7.7 billion. Not even one half of one percent of our planet owns Bitcoin. Looking at the S-Curve graph you can see that Bitcoin is only in the early adopter phase. Because there will never be more than 21 million Bitcoins in existence, the demand for Bitcoin as it enters the early majority and the late majority phase will arguably push the price into another parabolic run.

When you hear analysts predicting Bitcoin will rise to one million dollars, it is these charts, along with population numbers that underscore their conclusions. If there were mass adoption by a billion people then Bitcoin would reach staggering amounts based on supply and demand alone. No one can know for sure if there will be mass adoption so be cautious when considering these predictions.

CHAPTER 15

HOW TO OBTAIN BITCOIN

You do not need to be an expert to buy and sell Bitcoin but you do need to learn what it is and how to use it safely so you are not conned or stolen from. You need to bookmark several sites so you can keep track of the market and protect yourself. You need a device dedicated exclusively to your trading account. If you are not comfortable with this, then buy and hold is the strategy for you. Sometimes the best trading strategy is to not do anything.

Since this is a book for beginners, I am going to show the easiest way to buy your first Bitcoin. I do not know of an easier way. There is a crypto bank called Coinbase. It has been around several years now and is one of the biggest in terms of a number of accounts and amounts on deposit. You need to open an account by signing up on their website. You open your online account the same way you would open any online bank account. The bank's central office is located in San Francisco, California.

In order to open an account, you will be required to identify yourself with proper identification. You will also be required to provide your social security number. Coinbase complies with US banking regulations such as know your customer (KYC). Once you open your account you need fiat currency (dollars) in order to buy your first cryptocurrency. You may do it with a credit card or you can link your checking account from your current bank and transfer cash funds to Coinbase. If you do not want your other account linked, then you can wire transfer funds into the Coinbase account. Once the funds are available you can then buy Bitcoin or a handful of other Alt Coins. This is not an investment book so you need to study up or get professional help as to how you want to allocate your funds.

You can now convert cash into Bitcoin. The symbol for Bitcoin is BTC. After buying Bitcoin it will appear in your "wallet" with an ID number. It is a long string of random numbers and letters. You will need the wallet number in order to spend, convert, or transfer your Bitcoin. You must be sure to safeguard this number in several methods. Losing the account number for your Bitcoin results in the loss of your coins. People have literally lost

millions of dollars in Bitcoin over the past ten years and they cannot be recovered.

One method to protect this information is to print it on paper and then store the paper someplace secure. Keeping your backup paper or flash drive with all your numbers in a safety deposit box in a bank is about as secure as you can get.

CHAPTER 16

BITCOIN ATMS

Another avenue in which to obtain bitcoin is through Bitcoin ATMs, which are popping up in various cities around the United States and now in other countries. To use a Bitcoin ATM, you show your ID to the ATM, put your fiat currency in, and the machine will send bitcoin to the wallet of your choosing. Because Bitcoin ATMs are subject to AML / KYC compliance, more than likely you will have to show identification and verify who you are before you can use a Bitcoin ATM.

For beginners, I strongly urge you to avoid ATM's until you are comfortable using cryptocurrencies. It is just too easy to make a mistake if you are inexperienced in this realm. If you put the wrong code into the machine your money could be lost forever. There is no do-over in crypto. The ATMs are also in public places so your personal safety with regard to doing economic transactions in public is no different than when using a cash ATM. You must be

vigilant. For example, do not approach them at night. With limited visibility at night, there is a much greater chance of being robbed. Use your common sense.

CHAPTER 17

CRYPTO WALLETS

The best way to protect your crypto holdings is to store them in an electronic wallet. Obviously, they are not your typical wallet. They are electronic storage methods that are called wallets by analogy. A crypto wallet is a place to store your electronic keys that evidence your ownership of crypto coins. A hot wallet is one that exists on the internet and a cold wallet is one that is stored on an exterior device that is not connected to the internet. A hot wallet can, in theory, be hacked because it is connected to the internet. It is vulnerable to intrusion by hackers.

Not so with a cold wallet. After downloading your keys to the cold wallet device (flash drive) you then disconnect it from your computer and store it somewhere safe. When you need access to your funds, you reconnect to your computer, enter your password and can then access and transfer your crypto funds. Once done, you disconnect from the internet and return your wallet to a

secure location. It is not nearly as convenient as a hot wallet but it is way more secure against theft.

As in all things technical, there are tradeoffs with every decision made. A hot wallet requires a password to open. If you lose the password, you can enter your email address and receive the password to access your funds. This is convenient but also risky. You could be hacked and your funds stolen.

With the cold wallet, they cannot get your password from a third party. It is known only to you. That is good news. The bad news? If you lose your password, there is no one to help you. You are now locked out with no way to access your funds. They may not be stolen but are out of your reach nonetheless. Keeping your password in a known location is on you at all times. If your maid throws it out thinking it was trash you have no recourse. Something to keep in mind while deciding how much security is right for you.

You do not have to have a wallet before buying Bitcoin if you are going to keep it on an exchange wallet. When you buy funds on Coinbase they have a hot wallet to

keep your funds. Most other exchanges do the same. They have an electronic wallet on the exchange to store your coins after you have finished trading. These are not nearly as secure as a cold wallet as we mentioned earlier. Do not ever leave your coins on an exchange. That is reckless and you are just asking for trouble.

If you plan on using a cold wallet you will definitely want to set it up before buying Bitcoin so it is ready for your deposit after buying or trading your coins on an exchange. I Know this all sounds strange to someone with no exposure to crypto, but once you start working in this realm it will become second nature.

CHAPTER 18

CRYPTO EXCHANGES

Once you obtain your Bitcoin on your Coinbase account, you are now ready to obtain Altcoins. You can buy a number of Altcoins without leaving Coinbase. In addition to Bitcoin, they presently hold Ethereum, Ripple, Litecoin, Bitcoin Cash, Stellar, Ethereum Classic, and Ox. There are several thousand different coins in the open market. If you want to buy other Altcoins you will need to transfer your bitcoin or Ethereum to an exchange where you can then trade Bitcoin or Ethereum for your desired Altcoin.

A crypto exchange is similar to the New York Stock Exchange or the NASDAQ. You need to open an account on the exchange and then comply with the financial regulations concerning KYC and provide proper identification in order to open an account. These are electronic exchanges so everything is done online. There is no physical building you can go to for customer support.

There are numerous exchanges. Many have poor cybersecurity and some of the hacks involving millions of dollars stolen are epic. Do not ever leave your funds on an exchange. They are subject to being hacked and stolen. The more popular exchanges are Coinbase Prime, Binance, and Bittrex. There are many others but I would not recommend any particular exchange. You are responsible for doing your own due diligence. The Coinbase Prime exchange is linked to your Coinbase account and coins are easily moved from the bank to the exchange and back again without incurring any fees. For a beginner, this is the easiest way to start learning without incurring fees in the process. After learning the ropes, you can then venture out to other exchanges that provide a much larger array of coins to choose from. Once again, if you are a beginner, try to stick with the top 20 or 30 coins before trying to find that proverbial diamond in the rough.

CHAPTER 19

2 FACTOR AUTHENTICATION

Security is a serious concern no matter where you store your coins. You need a very difficult password for your accounts. In addition to a sophisticated password, you will also need what is called 2 Factor Authentication, as a second guard to prevent theft from your account. 2 Factor authentication is an absolute must for anyone who has serious money in the crypto sphere. A lot of wallets will use a login and a password or pin to access them. This is good, however, having two-factor authentication can make your wallets and crypto holdings a LOT more secure.

In two-factor authentication (2FA), your login and password/pin is the first factor. The second factor can be:

- an email sent from your wallet that you have to click on to confirm access, or
- a text sent to your phone number with a code you enter in, or

- a code provided by Google Authenticator or other 2FA apps.

You will need to download Google Authenticator on your cell phone. This is a random number generator that changes the code number every 30 seconds. It will be connected to your electronic crypto account. You must follow the prompts and you will use your QR reader to connect your phone to your wallet. Both factors in 2FA are required to gain access to your account. That makes it a lot safer versus using just a login and a password, which can be hacked. You will need actual physical possession of your phone when accessing your account.

While this enhanced security adds another layer of security, nothing is foolproof. The news is filled with stories of cybercriminals stealing information from millions of accounts held by credit card companies, technology from defense contractors, etc. They spend literally millions on security and still get hacked. The advantage of crypto is it is decentralized. They can only hack one wallet at a time. With a centralized credit card company, one hack can be a bonanza of millions of accounts being compromised. Crooks tend to look for the low hanging fruit. They prefer

to prey on the unwary. Be responsible and secure your crypto information with multiple safeguards. It is a game of odds so you need to play smart.

CHAPTER 20

COINMARKETCAP.COM (KNOWLEDGE IS POWER)

In order to track the markets in real-time, you need a source of information separate from your wallet and exchange accounts. You can avoid logging on more than necessary by using one of the cryptocurrency reporting sites. Coinmarketcap.com is one of the best. They track several thousand coins and update prices continually. They also provide percentage gains on each coin for one hour, one day, and one week. Each coin has its own page where you can connect to their website, information channels, etc. They also provide price graphs so you can follow your coin's history at a glance. There is another one called Blockfolio that is an app that can be downloaded on your phone. You can then track your coins on your phone 24 hours a day.

CHAPTER 21

STEEM AND BAT – GET PAID TO BLOG

We are all familiar with the Facebook model. You post content and Facebook makes all the money from your intellectual property while you get a "like" posted by family and friends. Steem is a similar platform to Facebook in that you set up your personal site on the platform and you can blog or upload things of interest. The difference is you are paid for putting up content by fellow Steemians. They will upvote your work and that will trigger micropayments. It can occasionally reach over a hundred dollars for one post. The growth for this platform has slowed for some reason but shows over 1,400,000 open accounts.

Basic Attention Tokens (BAT) is similar to Steem only now you not only get micropayments for creating content but you can also be paid just for looking at adds. BAT has its own browser called "Brave." It is showing

exponential growth at this time. It is in the early stage so it is too early to know if it will catch on. They are a disruptor for Facebook so they have their work cut out for them if they are going to disrupt the 800-pound gorilla.

CHAPTER 22

CRYPTO MINING

Crypto mining is a way to create Crypto Coins out of thin air. While they use the term "mining" to describe this process, it does not actually involve digging in the dirt. You have computers that are solving math equations and receiving rewards of cryptocurrency for solving the "blocks." The technical aspect is far beyond a beginner's book. If you are interested in becoming a miner there are numerous videos on YouTube that will explain how to build your "mining rigs" and how to actually create cryptocurrency.

This is well beyond the ability of a novice. To create one mining machine will cost upwards of $3,000 in 2019 if you buy the parts and assemble it yourself. To buy one already made is around $5,000 per unit. One mining rig will be able to make a couple of hundred dollars per month. Unless you can actually scale, this is a waste of time for most.

CHAPTER 23

MASTER NODES

An alternative to mining is the purchase of a "master node." Not all cryptocurrencies will allow for this means of producing crypto. One example is AirWire. This platform uses a cryptocurrency called "Wire." You can send or receive Wire all over the world. It can then be converted to the fiat currency of your choice. If you live in Montana but your kids are on spring break in Miami and run out of money, you can send Wire to their cell phone instantly and they can then convert to dollars.

The platform requires what are called 'nodes" to maintain the stability of the platform. A node is 35,000 Wire. You must commit the 35,000 Wire to the platform to be a "Master Node" that now receives Wire payouts for supporting the platform. The AirWire platform has technical support to assist anyone who wants to participate. There are a number of cryptocurrencies that use this format instead of mining. Setting up a node

requires a lot of technical skill. If you are not trained in this area, do what I did. Hire a professional to set up and maintain your nodes.

The established cryptocurrencies that use the master node format are becoming very expensive. Once again this is not recommended for beginners. Dash requires 1,000 Dash coins to become a master node. Dash is presently trading at a little over $83 per coin. One master node would cost over $83,000. The wire is so inexpensive at the moment that 35,000 Wire would cost $35. For a trivial sum of money a beginner can learn the ins and outs of using a master node before committing to the established coins with a real return on investment.

Full disclosure, I own Wire and have a master node. I am not making a financial recommendation. I am pointing out that for a small sum of money you can become familiar with how a master node works by using Wire to start.

CHAPTER 24

PUTTING IT ALL TOGETHER

Now that you have been introduced to the basics, how do you enter the Crypto Universe? Full disclosure – I am a Boomer and have no formal "technical" education. Like many of my fellow Boomers, cyberspace is a place I go to get lost. I have no formal computer training. I did not let that stop me from going on the adventure of a lifetime. So, for those who are technically challenged, I will share my secret. I had millennial tech geniuses explain it all to me over quite a few beers. Now that's an academy I can get with. They schooled me on the academic side as to what Bitcoin and Altcoins are. How they function and why we need them in the modern world.

I hired experienced technicians to get me past all the barriers to entry. They helped me open my first crypto account. They helped me register on my first exchange. They helped me buy my first Bitcoin and make my first transfer to send Bitcoin from a wallet to an

exchange. They were seated at my elbow when I turned a Bitcoin into an Ethereum for the first time. Once I started down this path I used my cell phone to make a video as they set things up so I had a step by step personal video tutorial to allow me to go back repeatedly until it became second nature. Paying young professionals $20 an hour (plus beer) to spend a couple of hours walking you through the barrier to entry is the best money you will ever spend.

After gaining confidence and experience I went to YouTube and was able to build four mining rigs. I hired a computer analyst to make my rigs operational and he entered them into mining pools. I watched as crypto coins actually entered my wallet like magic. Created out of thin air. Some of my crew were friends and volunteered their expertise. Others were hired and I paid them $20 an hour. They helped me set up security measures to prevent theft. I now move seamlessly through the crypto realm with confidence. Anyone can hire the technical staff to become proficient in a matter of hours.

Paying a hundred dollars to make sure you do not trip while entering a realm where millionaires are being created daily is a small price to pay. If you do not know someone in the tech field, go to the professors in your local college and get a reference for hiring one of their star pupils.

CHAPTER 25

UNDERSTANDING MARKETS – DEATH CROSS AND GOLDEN CROSS

Once you obtain your first Bitcoin, I do not suggest straying from the top 20 coins on Coin Market Cap until you have a wide understanding of the Crypto Universe. There are some basic principles that will protect you from the scams. A serious hint before you get started. James Altucher (extensive writer on all things crypto) has declared that 95% of all Alt-Coins are a scam. Having bought and sold in this realm for two years, I would have to concur. One way to protect yourself, while learning, is to stay with only the coins supported by Coinbase. While not perfect, Coinbase knows a hell of a lot more about crypto than you or I will know in a lifetime. Once you have enough of an understanding you can venture out.

Before we discuss chart analysis, a word of caution. There has always been an ongoing debate as to whether

there is any validity to whether chart analysis is valid and can actually predict future movement in the stock market. When you apply those same principles to analyzing Bitcoin it becomes even more problematic.

One thing that is painfully obvious is the so-called "financial experts," when it comes to cryptocurrency, are mostly clueless. There are no experts. This is a new disruptive technology and no one can be sure how this will end. My personal experience in reading and listening to the technical analyst crowd in the crypto realm is they have no credibility, whatsoever. The clever ones make vague pronouncements with so many qualifiers to ensure they are always right. Their opinion has no utility because they are basically saying the market might go up unless it goes down. Totally useless when trying to make a decision. The ones with the courage to make definitive pronouncements tend to be no more accurate than a coin toss.

When the market exploded, many experts and the media were screaming it will crash. While the market went from $2,000 to $19,800 in a matter of months, none of the naysayers ever acknowledged we saw eye-popping

gains. They called it a bubble and predicted it would disappear. When the market began the crash in January 2018 the believers kept announcing a bottom was reached and we would go back up shortly. After 18 months of continued losses, none of these experts apologized for misleading people during an 18-month crypto winter.

So, why am I bringing up chart analysis? There are two known configurations that have occurred twice respectively in the ten-year history and they tend to give a sense of the general direction of the Bitcoin price. The death cross occurs when the 50-week moving average goes below the 200-week moving average. This is seen as a gauge on buying sentiment. It tells you the buyers are extremely negative and the price will trend down for a while. It will not tell you specifically when and where the trend will reverse, but it will take a while. Do not buy into crypto after a death cross. You need to wait for the trend to reverse to start buying. People who get in a hurry tend to lose money. If the price-performance trend is clearly negative the beginner should not try to be clever.

The golden cross is the exact opposite of the death cross. This is when the 50-day moving average goes above the 200-day moving average. This is seen as very positive and suggests the price will trend upward for a lengthy period. Once again, it will not tell you for how long. It will not give a date and time for when the trend will reverse.

In December 2018 Bitcoin finally hit bottom at $3,200. The price slowly rose to $4,000 until early April 2019 when it rapidly rose to $8,600 in a matter of weeks. Every day the naysayers were hysterically screaming its gonna crash to $1,000 or even zero so you needed to get out now! Of course, they were wrong, again, as the rest of us laughed and doubled our money. It is interesting to note that the negative crowd uses the 18-month decline to claim victory and the positive crowd claims victory because Bitcoin started at less than a penny in 2009 and in June of 2019 it sits at or near $11,200. I will let that fact sink in for a moment and then you need to decide for yourself where you will plant your flag.

So, if there are no real experts (my opinion) then what can you do to protect yourself? You need to read

voraciously on how the market moves and do not put more money in this sector than you can SAFELY AFFORD TO LOSE. Do not buy on credit, do not use your children's college fund. If you had bought at the top of the market in December 2017 at almost $20,000 per coin in one year you would have lost 80% of your money. So much for buy and hold. If you did not get in on the three previous upward trends, that lasted almost two years each time, you missed the opportunity to become a multi-millionaire with a very modest initial investment. The word for this is VOLATILITY.

While I am not an economist or a certified financial anything, the two things that seem to pan out are the Death Cross and the Golden Cross. There have been three Golden Crosses in Bitcoin's history. The first two led to almost two years of upward gains each time. The first golden cross in Bitcoin occurred on October 2011 when Bitcoin was $2 and the rise continued up to November of 2013 when it peaked at approximately $1,142. Then the second golden cross occurred in October of 2015 and we witnessed bitcoin go from $340 in 2015 to an all-time high of approximately $19,800 in December of

2017. We have now seen the third golden cross which occurred on April 24, 2019 when Bitcoin was $5,500. At the time of writing, Bitcoin has been steadily climbing and is presently over $10,000.

If you do not understand the terms Golden and Death Cross, there is a simple solution. Hire a financial analyst and pay him for an hour of his time to explain this concept until you understand it thoroughly. If you do not like that idea, then go on YouTube and there are many videos that will explain the concept for free.

CHAPTER 26

RISKS — CRASH, REGULATIONS, THEFT

This is a book for beginners so while there are numerous risks in any financial decision, I am only going to speak to the largest ones that are, unfortunately, inherent in the crypto world. The greatest risks, in no particular order, are volatility, theft, 51% attacks, government hostility, lack of regulation, and uncertain laws. While all stock markets have the risk of a crash, it looms large for Bitcoin and is even worse for the Altcoins. I have witnessed several "flash crashes" where a crypto coin suddenly loses 90% of its value for two seconds and immediately returns to the original amount. This is jarring, to say the least. It is not only Bitcoin that can suffer a flash crash. If you find this terrifying, then maybe you need to stay out. I have never seen one do permanent damage but they have occurred so I felt it necessary to alert beginners to this reality.

There is always the possibility of another crash. There is no guarantee that Bitcoin will not collapse to zero. That said, when you listen to the shrill naysayers who claim Bitcoin is certain to crash, the very arguments they are making apply equally to gold or fiat currency. In my mind, their refusal to acknowledge this or address it makes their arguments seemed forced and unpersuasive. If I were to make these same arguments towards gold they would point to its 5,000-year history as proof it is real.

As far as I can see that is the only significant difference between gold and Bitcoin. Keep in mind that bitcoin is only 10 years old but has been pronounced dead by media pundits well over 400 times. How can the media be so wrong about something consistently? The idea that a technology invented 5,000 years ago (gold as a store of value) will be the final chapter in a digital age seems specious on its face.

Government regulations are another issue for this sector, or should I say lack thereof. I was approached to be part of a team that wanted to open an exchange. I was charged with doing the legal compliance for our exchange.

After a week of research, I declined the very exciting and generous offer. The US Government could not decide what Bitcoin or the Altcoins were to be. IRS found it to be a currency, the SEC said it was security, while a US District Court found it to be property. Law enforcement claimed it was a criminal instrument, and on and on. I read about a trader who was criminally prosecuted for running a currency exchange without a license because he was selling Bitcoin for cash directly to the public. So, if I made change for a visitor from England in US dollars in exchange for his British pounds I am now operating an illegal money exchange? All in all, the entire area was completely undecided with traps for the unwary around every corner. We see the law evolving and the environment is becoming more settled. That said, there is an idiot congressman who is calling for a complete ban on any US citizen owning Bitcoin. No one is listening to this jackass but he is on several Congressional Committees and he does get interviewed by the media.

This legal uncertainty and lack of regulations have been one impediment to crypto development. It slowed the adoption of revolutionary technology while allowing

scammers to foist Ponzi schemes on the unsuspecting public by disguising them as legitimate projects when they were really only 'pump and dump' scams. The SEC could not decide if they were currency or securities. The IRS would not give guidance to help honest taxpayers know with certainty what was and was not a taxable gain. China, Russia, and India issued outright bans on owning, mining, or trading crypto of any kind. In the face of all this resistance, Bitcoin and crypto projects continued to flourish. China recently lifted the ban and actually praised blockchain technology.

One thought for those readers who chafe at the notion of authoritarian regimes abusing their citizens under the yoke of oppression. Decentralized ledgers, Bitcoin, and the blockchain are revolutionary. The dictators and autocrats cannot control it, banks cannot extract fees from those who use it. If you want to be part of a modern-day revolution, this is it.

We do need some common-sense regulations in the crypto realm. Using cryptocurrency to make ordinary small purchases should be exempt from any tax consequences. The idea that I need to keep records and compute gains when I buy a candy bar or a gallon of gas is

absurd. There is pending legislation to do just that in the US for purchases under $600. We need to reform the SEC oversight because they are using legal tools and a legal framework that is over a hundred years old and trying to apply it to a 21st-century invention. Not a good fit. They need to stay out of the way except for the prosecution of fraud. If you make false promises to get people to buy your coin, you are not clever, you are a fraud. We have existing laws to deal appropriately with thieves.

Unfortunately, we are still not done with navigating the perils of the crypto universe. If there are insufficient miners (computers) that are hashing the blockchain then the cryptocurrency is vulnerable to what is called a 51% attack. If 51% of the computers are taken over, then they can force the system to accept information that is not true. The ledger can be corrupted. While it is possible, it is unlikely because it is incredibly expensive and requires access to huge amounts of information and computing power. Except for governments, few have access to this kind of sophisticated attack. The small altcoins and small exchanges occasionally get hit with a 51% attack. Since you are a beginner and are reading this book, you are not

worried about this because you are not buying obscure coins or opening accounts on small exchanges.

And finally, we get to theft. CryptoCurrency has been likened to the wild West of the 21st century. You must be ever vigilant in protecting your stake. Several obvious recommendations: never leave your funds on an exchange, never give anyone your password, always use 2-factor authentication with a random number generator. Do not leave any confidential information on your phone.

How do they hack a person's individual account? They need your account identification and your password to open your account. Since you are reading this book you know in order to transfer your tokens to another wallet, they need your cell phone to do 2-factor authentication. While nothing is foolproof when it comes to cybersecurity, you need to take precautions.

You need a strong password and a secure cell phone to start. Do not ever give your password out, ever. Keep it written down and hidden somewhere or stored in a safety deposit box in a bank vault. I am not kidding. Do not have your password on the same computer you use for banking.

Do not have your password on your phone. They hack your computer and the password is in a file they now have account and password. They trick your cell phone carrier into porting your number to their burner phone, they will now steal everything in your account. To stop this, you also need to contact your cell phone provider and request a "port freeze" or "port lock." This will prevent a hacker from porting your number to his phone so he can circumvent your security measures.

Another level of security as mentioned earlier uses a cold wallet. Transfer your tokens to a flash drive that is set up to hold cryptocurrency, such as Ledger. Your crypto keys are stored on the drive so no one can move it without having physical possession of your drive. They also need the password to open the drive. Put that wallet (drive) in a safety deposit box and it is secure from hacking until you access the drive to use your currency.

I have only touched on the surface here. I use many security methods that I will not share on a public forum. I have just listed the very basics. My advice is to hire an expert on cybersecurity and have him explain and help you set up sufficient safeguards so you do not get hacked.

CHAPTER 27

CURRENCY ALLOCATION

Full disclosure for the second time, I am not a financial advisor nor a certified planner of any kind. This book is meant to help the beginner enter the crypto sphere but is not meant to give financial advice as to how you should invest your own money. This information is being provided for educational purposes only and is not to be construed as an offer to sell or as financial advice. With that warning, I would point out that all cryptocurrencies, including Bitcoin, are extremely volatile. For that reason alone, do not invest more money than you can lose without creating financial problems. People who bought Bitcoin in July of 2017 saw their coin go to $19,800 in December of that same year. An increase of almost 800% in 5 months. People who bought in December of 2017 at $19,800 saw their Bitcoin crash to a low $3,200 by December 2018. A loss of over 600% in a year's time. Ouch. For those who paid attention to the death cross and the gold cross, these two events became obvious long before they reached their ultimate outcome.

Do not put all your eggs in one basket is an old slogan that applies equally to cryptocurrencies. Bitcoin is the major player and dwarfs all other players. That said, it is not the only player and some of the Altcoins, on occasion, will outperform Bitcoin. Once again I would caution beginners to stick with the top twenty coins until you know enough to gamble on a long shot. Many of these coins will crash to zero. You do not want to be one of the bag holders when this happens. This is your chance to learn from my education in the college of hard knocks. When these coins crash to nothing, there is no going back. You can learn from my mistakes by going slow and being cautious.

One way to get into the crypto sphere is called cost averaging. If you are dedicating a thousand dollars to your crypto holdings, do not spend a thousand dollars on the first day. Instead, buy $200 on day one and then buy $200 more once each week. This way you have spread the purchases out over a five-week period. There are many more strategies to try and address the volatility problem with crypto. These concepts are well beyond what a beginner's guide will show. My advice? Get with a financial planner and adopt a plan that best fits your

needs according to your risk assessment, age, goals, etc. If the financial planner advises you to avoid cryptocurrencies altogether, then fire him and find one who lives in the 21st Century. Do not borrow money to buy crypto. It could lead to financial ruin.

Initially keep Bitcoin as your largest holding. My Bitcoin holding never goes under 60% of my crypto allocation. I may not do as well as some more aggressive traders, but I also sleep well at night. I also trade as little as possible. I am more of a HODLer. That is not a typo. Check the Crypto Dictionary at the end of this book.

CHAPTER 28

RESPONDING TO THE CRITICS

Practically every criticism lodged against Bitcoin would be equally applicable to gold. Let's unpack the standard criticisms you will hear hurled at Bitcoin.

1) **Bitcoin has no intrinsic value.** Gold has no intrinsic value. Some will point out that gold can be used in electronics so it does have intrinsic value. That use is negligible in looking at the price of gold. Presently gold is $1,500 an ounce. If it was valued based on its commercial utility alone, gold would be worth substantially less. Standing alone, it is basically a worthless rock, no different than gravel. It has a high value because the world collectively believes it has a high value. If everyone stopped believing gold had value, it would plummet to a trivial amount in an instant.

Bitcoin shares the same properties as gold that we discussed in the earlier chapter on currency. The difference is gold has a 5,000-year history and Bitcoin is

only ten years old. There is no reason gold could not be replaced by a better store of value. After all, gold replaced beads and shells as a form of money. It was paper currency that then replaced gold as a currency. There is no reason Bitcoin could not become the new store of value or currency worldwide.

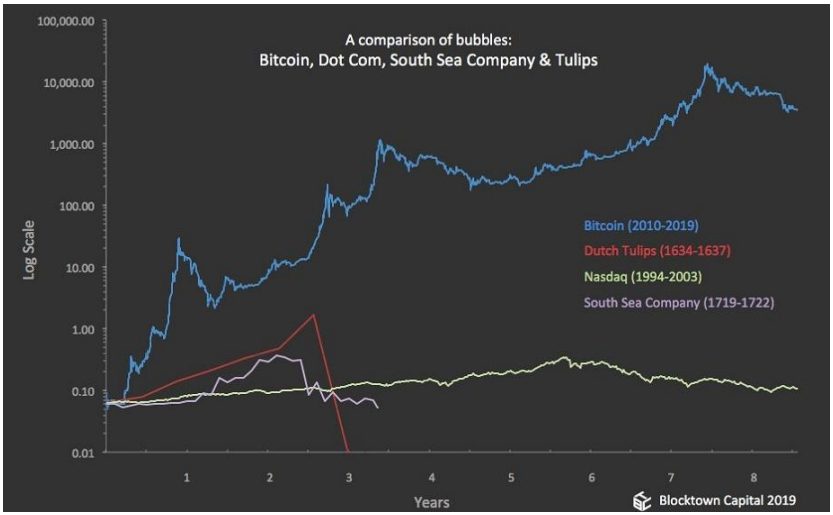
I would also like to confront the accusation that Bitcoin has no intrinsic value. This statement is possibly not true. Bitcoin is the coin that is mined on the Bitcoin blockchain. The blockchain was invented as the infrastructure to support Bitcoin. Earlier we explained the blockchain is a trustless, decentralized, public ledger that can store information. The blockchain requires miners to maintain the integrity of the blockchain.

This system allows for a currency that cannot be manipulated by man, governments, nor banks. To have a system such as this has value. Just as a bank has an intrinsic value for the service it provides to society, so does Bitcoin. I would refute those who say Bitcoin has no intrinsic value because its function itself has value to society.

2) **Bitcoin is not an alternative store of value because it is volatile.** Gold has volatility - just like bitcoin. Gold's volatility, however, is measured in years, not months or days. In 1976, it was trading around $488 per ounce, in 1980, it was trading north of $2,200 per ounce. In 2001, it crashed to $385 per ounce. In 2011, it was trading around $1,970 per ounce. And in 2019 it corrected to $1,277. In the summer of 2019, it hit $1,500. So much for the stability of gold. Throughout the years it has moved all over the place. As Bitcoin matures as an asset class the volatility should slow. The volatility we are seeing is occurring as it replaces fiat currency as a digital payment system.

One last word on the gold/Bitcoin debate as to who is a real store of value. Presently, Bitcoin has risen 1.4 billion percent in value since its creation. Gold has given a return during the same ten-year period of a total of 17 percent. While Bitcoin went from less than a penny to over $10,0000, Gold went from $1,087 to $1,280. These disparities in returns are staggering and yet economists and gold bugs continue to claim gold is a superior store of value. This is truly Alice in Wonderland with these people.

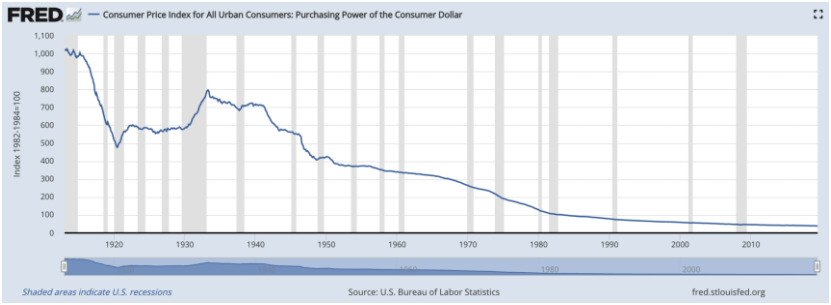
3) **Bitcoin is a bubble-like the tulip bulb mania that occurred in 1634.** The chart shows several famous bubbles that occurred throughout history. A casual view of the graphs seems to disprove the very idea that Bitcoin is a bubble. James Todaro, MD of Blocktown Capital published the below chart to help us get some perspective on the "Tulip Mania" accusation.



While it may have developed a bubble a time or two, Bitcoin itself is not a bubble. Remember the housing bubble that popped in 2008. I do not hear these critics calling housing worthless and not to purchase one because it once suffered through a bubble. Housing, like

the NASDAQ and Bitcoin, all recovered from their temporary bubbles.

4) **Bitcoin is too speculative to use as a currency.** The US dollar, since 1913, has lost 95% of its value. How do you criticize Bitcoin while accepting a currency that is down in actual purchasing power by 95%? A car in the early 1900s was under a thousand dollars. Now a midsize car is $40,000. As a child, I went to the movies for 50 cents. Forty years later they cost $20. Get the picture?



Bitcoin, in its present form, is a fixed amount and not subject to governmental inflation like a fiat currency. It was designed to prevent the inflationary spiral as evidenced by the above chart.

Still not convinced? Barry Silbert, the CEO of Grayscale Investment was quoted as saying: "Based on history, we can see that fiat currency tends to not exist into perpetuity after some time. Usually, currencies get deflated or are destroyed due to debates or wars. Now I know that Bitcoin will not be able to completely replace the Dollar or the Euro but it is certainly gaining a foothold in the financial ecosystem." There are 193 countries in the United Nations. Bitcoin does not have to replace the currencies in all of them to become relevant. How many of them use gold as their currency? The answer is none. Would anyone seriously argue gold is irrelevant or has no value in spite of that fact?

5) **The criticism about Crypto being a tool for criminals and terrorists is completely overblown.** Have they been used to launder money or finance crimes? Yes, on very rare occasions. The movement of crypto is permanently recorded on the blockchain and accessible to anyone who wants to track the movement. For that reason, it is a bad choice for criminals looking for anonymity. Cash, on the other hand, is used in the vast majority of these situations. It really is anonymous and

leaves no trail. We are safer as a society if we convert to using cryptocurrencies than we are using cash.

There are some criticisms that are valid. First, Bitcoin and altcoins are very volatile. The price can fluctuate very quickly both up and down. The swings can be massive. This is due to a lack of liquidity. Second, Bitcoin is not accepted for payment of goods in many places. If crypto were widely adopted, as a form of payment, then the volatility should in theory eventually subside. It is truly unknowable whether it will be adopted and no one can know for sure. The number of merchants who accept Bitcoin is growing exponentially presently so if this rate continues it will not be long before you can actually live on Bitcoin. Third, crypto exchanges are subject to being hacked and people's crypto holdings being stolen. Security is a constant pain in the ass. You have to be diligent about security.

The critics come from all walks of life. Many educated financial people are dead set against crypto without having any real understanding of what it is and why it is revolutionary. Banks and wall street tend to go

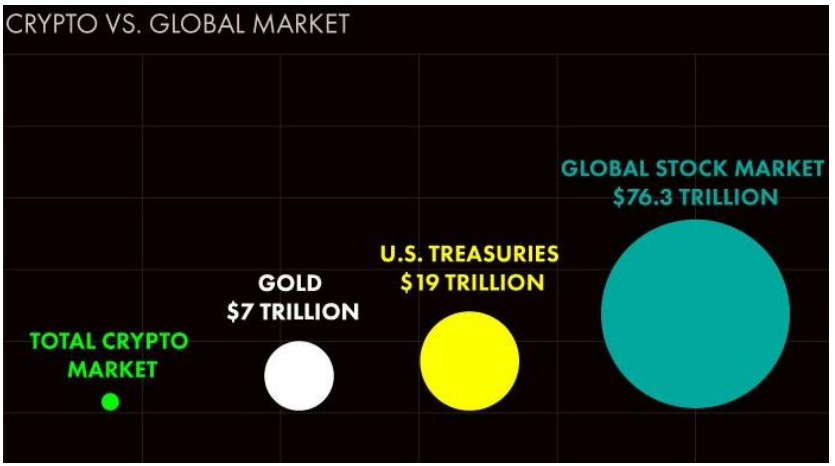
against it because it represents an existential threat to their very business model. Their motive is obvious - survival. Older people, set in their ways, are unwilling to risk something new. Non-tech people find the barrier to entry too much to overcome so they respond with contempt. Government bureaucrats and lawmakers alike are against crypto because they cannot control it. Regulators are suspicious because they are unsure what to do. Law enforcement has been misinformed so they believe it is the tool of the criminal underworld, and on and on. If you do your homework, I promise you will see through them all.

Do not waste your time and energy debating the naysayers. You will not change someone's mind. Belief systems are immutable to facts. People default to their natural assumptions and will wear you out with silly arguments and inaccurate facts if you decide to engage them. Make as much money as you can in crypto and laugh to yourself when they repeat things they heard on TV or read on the Internet. It is their loss. Do not let them infect your mind with their negativity. Find people who share your interest in Crypto and forget the others.

CHAPTER 29

UNIVERSAL ADOPTION EFFECT

In June 2019 a single Bitcoin reached a value as high as $13,800. The Market Cap was over $240,000,000,0000. To get this in perspective the world value of all gold is 7 trillion dollars. All US Treasuries are 19 trillion dollars. All the world's stock holdings are 76.3 trillion dollars. The final number of Bitcoin when the final coin is created will be 21 million. This number is fixed, mathematically. If Bitcoin were to replace fiat currency, with a hard cap of 21 million coins then one Bitcoin would be worth one million dollars.



This finally brings us to the new Facebook coin called Libra that is expected to be released in early 2020. Some see this as the on-ramp for the world to adopt digital money. It reminds me of the cluster effect. When a bar opens in the downtown area of a city they are always concerned about competition taking business from them. The "cluster effect" is the phenomenon that can be seen and measured when similar businesses cluster in the same part of town and they draw more business rather than if they were alone. The addition of similar businesses draws more traffic and generates additional revenue for all. Instead of losing business to their competitor, they have increased traffic fueled by the cluster of similar businesses that are now deemed an entertainment center.

Facebook has over two billion clients. Currently, there are approximately 32 million crypto wallets. If Facebook is successful in moving 2 billion people into adopting electronic currency, then Bitcoin would be much closer to widespread adoption. Some fear Libra will compete with Bitcoin while others see it as the final act to move the entire world onto digital currencies. As we discussed earlier, it is impossible to predict the future with any certainty. That said, if the cluster

effect is in play, you will wish you were on board with Bitcoin before the world adoption starts. That time would be now. As I mentioned earlier, nothing is guaranteed. Do not use the money you cannot afford to lose.

Anthony Pompliano Summary

Anthony Pompliano, the founder of Morgan Creek Digital, has written a brilliant theory as to why Bitcoin will ultimately replace all fiat currencies. Titled: "Bitcoin's Department of Defense: The Case For A Global Reserve Currency With No Guns," it gives a brief history of how dominant currencies have historically risen and fallen. Always based on military strength, those countries used their currencies as the global reserve currency to dominate world trade going back to the Silver Drachma of ancient Athens during the 5th century BC. Pompliano takes us to the present when the United States replaced the British Pound with the US Dollar as the world's reserve currency.

"Previously, the country with superior military firepower and tactics prevailed." Pompliano makes the observation that the world is transitioning from physical warfare with guns and bombs to cyber warfare. The US has

weaponized the US Dollar to subdue the likes of Iran and North Korea. He posits the question, as to what happens when economic sanctions or cyber warfare are no longer possible? Bitcoin is slowly on the rise to become the new world currency. The difference being no country has control. No one state can use Bitcoin against another state.

Pompliano summarizes this in three parts:

"Let's look at the three main threats to a currency's global reserve status:

1) *Military superiority – If you control the global reserve currency and your superpower status is revoked, you have historically lost global reserve status. No matter how hard nation-states try, there are no individuals, companies, or physical locations to attack. No one person or group controls Bitcoin. …… Simply, the decentralized nature of Bitcoin renders military superiority irrelevant.*
2) *Economic sanctions – The US has done a great job defending its global reserve status by weaponizing the US dollar. Unfortunately for the world's leading currency, there is no individual, company, or country to sanction in an effort to stop*

Bitcoin. No one is in control, therefore the economic sanctions are rendered irrelevant.

3) *Cyberwarfare — Over the last 10 years, Bitcoin has become the most secure computing network in the world. …. Because of Bitcoin's decentralized nature, cyber warfare tactics are rendered irrelevant."*

"The world is changing quickly. Nation-states are behind the curve. And Bitcoin is the sleeping giant that is well-positioned to be the first currency to achieve global reserve status without ever having to engage in conflict."

Pompliano captured this too well to not give credit where credit is due. His weekly musings can be subscribed to at https://offthechain.substack.com. Full disclosure, I have no economic connection with Off the Chain and I have never personally met Anthony Pompliano. I am a fan, however.

In December 2019 Deutsche Bank (the second largest bank in the world) released a report titled "Imagine 2030, The Decade Ahead." One entry was titled "Cryptocurrencies: the 21st century cash," written by Marion Lebourne, PhD, lecturer at Harvard University on economics and finance. She opined that cryptocurrencies have the potential to eventually replace

cash as we move towards a cashless society. It is not just speculators who see the potential on the horizon.

While there is no guarantee that the above theories will play out, it is important to note the critics of Bitcoin seem to be unaware of any of this type of analysis. If they are, they sure are quiet about it. Their superficial rants ring hollow. Bottom line, if you use the money you can afford to lose, then you are part of one of the greatest adventures of the 21st Century. To hell with the critics. If Bitcoin actually gets enough traction to become the next world store of value and you did not get in now, you will regret that decision.

CHAPTER 30

THE WILD CARDS

NASA and several private companies have plans to capture and mine asteroids. They are predicted to have trillions of dollars in precious metals and gold. If they were to bring tons of gold to earth, it would end the scarcity of gold and render it practically worthless. Gold, as a store of value, depends on scarcity to maintain its value.

An episode of the Twilight Zone from 1961 had a plot where gold thieves were in suspended animation for 100 years. When they awaken in 2061 we find out gold is worthless because chemists figured out a way to mass produce it. The story ends with a modern man throwing the gold brick on the ground and getting in his electric car to drive off. The science fiction writer, Rod Serling, was toying with the idea that gold would become worthless some 60 years ago. He got the electric car right as well.

If we actually build bases and colonies in space, we will need a currency to perform commerce in these

remote locations. Gold cannot fit the bill. It is too expensive to transport a heavy object that has no utility in the space environment. Bitcoin and cryptocurrencies to the rescue. They can be sent wirelessly through space to fund the commercial transactions. They are stored on computers and flash drives just like all the other information being used in space. Space commerce is such a new and undeveloped area that I referred to it as the wild card. While it is unknown if it will actually appear, if it does, gold is unlikely to go into space and we have one more need that will be filled by cryptocurrencies.

Dematerialization is another concept that suggests cryptocurrency is inevitable. What is meant by the term is we are making everything that involves information smaller every year. The first computer in the MIT basement in 1960 weighed 29,000 pounds and was slow. The smartphone in 2010 weighed 8 ounces and was a billion times more powerful. Our bulky cameras with poor focus control are now contained on a chip the size of a postage stamp. Our televisions weighed several hundred pounds and the current flat screens of the same dimensions are only a fraction of the weight.

Currency is an information technology, no different than any other. Cryptocurrencies are code. They are virtually weightless. This is just one more manifestation of a growing trend in all things involving information. When people say they do not believe this transition will occur, I respond it is reckless to deny what is occurring all around us in plain sight. You do not need a large stake in crypto to participate in the revolution. As long as you use money you will not miss, you literally have nothing to lose.

CHAPTER 31

CONCLUSION

Money is a measuring stick, it is not a magic wand for a central bank. A measuring stick can't be part of what it measures, so if money is a measuring stick, it has got to measure an element of scarcity, that is inescapable, inexorable, and unchallengeable." -- George Gilder

So what does that mean? Bitcoin is constantly being compared to the US dollar for a way to determine its value. As the dollar fades, we will value items in terms of Bitcoin. Think of a house costing $250,000. If Bitcoin is adopted, you would price a home at 25 Bitcoins. You would no longer do a conversion when deciding on price. You would only price things in Bitcoin just like you presently price things in US dollars, while someone in England is using Pounds and someone in Mexico is using Pesos.

If I offered to sell you a dollar, what would you be willing to pay? The correct answer is a dollar. It is a currency and all dollars are the same. In the future what

would you give for one Bitcoin? The correct answer is one Bitcoin. If Bitcoin is adopted as a world currency then we no longer engage in conversions. Just as a dollar is a dollar, the same will hold true for Bitcoin.

There is also a generational divide in how people perceive Cryptocurrency in general and Bitcoin specifically. To make a gross generalization: Boomers know little about Bitcoin, Gen X is distrustful, Millennials are very open to Bitcoin, and Gen Z appears to be all in. The latest survey I looked at showed 71% of Millennials and 83% of Gen Z expressed an interested in owning Cryptocurrencies. This is critical when assessing trends. The aging Boomer generation (me) is dying off and Millennials will be inheriting the older generation's wealth. This means there will be definite movement from gold to Bitcoin. The digital generations are unlikely to keep with the practices of the analog generation. That is not to say gold will disappear but it will lose many followers as they secede to Bitcoin.

Bitcoin has certain properties that make it the perfect store of value. It is mathematically guaranteed to be scarce because there will only be 21 million coins in existence. It is robust and durable because it is maintained in an open ledger over thousands of computers worldwide. It is independent of the corrupting influence of governments. It is free of bank control and their insidious fees that eat at everyone's savings. The transaction costs are minimal.

It is unknown if Cryptocurrencies or Bitcoin will replace fiat currency worldwide. It is literally the million-dollar question. When trying to decide if something is a fad or is it serious, it always helps to see what

institutional money is doing. Institutions have to answer to investors and they are regulated by the federal government. So what is intuitional money doing in the crypto world? This chart tracks assets under management when it comes to cryptocurrencies.

The growth of institutional involvement is undeniable. These are serious people with serious money. While seven billion dollars is a tiny number compared to the trillions of dollars controlled by institutions in other areas, it is growing at an exponential rate. Should it continue at this rate, we will see a trillion dollars of crypto under management in less than five years.

For me, the exploration of the Crypto world is the adventure of a lifetime. To get this in perspective, I have always been a thrill-seeker. My resume is covered with all kinds of high adventure mentioned earlier. Bitcoin is not for everyone. The risks are enormous but so are the rewards. I have tried to create a roadmap, if you will, for beginners to enter this world in a cautious way to avoid the many traps. To quote another financial analyst:

"You see, unlike fiat monies, Bitcoin is anti-fragile, decentralized, non-sovereign, uninflatable (actually deflationary), immutable, uncensorable, borderless, permissionless, and programmable." -- **Raul Pal, founder, and CEO of Global Macro Investor**

Nothing in life is guaranteed. It is my belief we are witnessing a revolution that is playing out before our very eyes. The outcome is in doubt which makes things stressful, to say the least. I hope in some small way I have given some of you the courage to venture forward. I know I have said it before but, this really is the adventure of a lifetime.

CRYPTO DICTIONARY

ALTCOIN: Any cryptocurrency other than Bitcoin. There are presently over two thousand different coins. Most of them are scams. Buyer beware.

BITCOIN: Original cryptocurrency invented by Satoshi Nakamoto in 2009 as an alternative to Fiat currency.

CRYPTOCURRENCY: Electronic currency that is free of institutional or governmental regulation. Based on math with set rules.

CRYPTO EXCHANGE: Electronic markets where you can exchange cryptocurrencies for one another.

CRYPTO WALLET: An electronic storage device used to store the electronic code that defines your crypto holdings.

FIAT CURRENCY: Money created by governments. It is a promise to pay backed by law.

FOMO: Fear of missing out. When the price is rising rapidly, investors are gripped with a fear they are going to miss the gains that everyone else is getting.

FUD: Fear, uncertainty, distress. When the price is falling it describes the mental state of investors who fear the complete collapse of all their holdings. It prompts them to sell their holdings out of fear.

HALVING: An event that occurs where the rewards for mining Bitcoin are cut in half. This event is mandated by the code that created Bitcoin and occurs every four years. The price has historically increased rapidly during this event. Next one predicted in May of 2020 and then 2024.

HODL: A drunk Bitcoin enthusiast on a blog site meant to tell everyone to hold their Bitcoin and not sell. He wrote HODL instead of hold. It was then adopted as a Bitcoin enthusiast's battle cry. "HODL everybody" appears in all the Bitcoin blogs and is part of the community folklore.

ICO: Initial coin offering. When a new coin is developed, they usually have an initial offering period of time where the public can buy at a set price before they go live and the market will then find a price.

MARKET CAP: The total value of a coin based on its market price multiplied by the number of coins in existence.

SATOSHI NAKAMOTO: Pen name used by a person or group who invented Bitcoin and appears on the original white paper. To this day the true identity is still not conclusively known.

WHITE PAPER: Document that explains a cryptocurrency and how it functions.

2FACTOR AUTHENTICATION (2FA): The use of a second safeguard beyond the initial password in order to access your crypto account. It can be email confirmation, or a random number generator on another device also linked to your account.

NOTES

BITCOIN FOR BEGINNERS

Clayton Rawlings, Esq.

I received my undergraduate degree in 1977 from the University of Texas. I graduated from The University of Houston Law School with a JD in 1980. I have been a licensed attorney since 1980 and spent my entire 38 years in litigation. I have tried to verdict over 150 cases. I started as an Assistant District Attorney For Harris County, Texas right out of law school and handled everything from auto theft to Capital Murder. I left the office in 1985 and did primarily criminal defense for 6 years. In 1991 I tried my first personal injury case. I obtained a jury verdict of $1,061,000. I then spent the next 28 years focused primarily on obtaining economic justice for the injured and disabled. My firm, Hampton & Rawlings, was formed in 1985. It has been my honor to serve with my partner, Keith Hampton, for 33 years.

I am married and have raised 5 wonderful children who are all educated and employed and raising families of their own. My youngest daughter won the silver medal in the NCWA finals and was declared an All American. She was the first female wrestler to ever represent The University of Texas. My second youngest daughter is in a combat unit in the United States Army. She is a gunner on a multi rocket launcher and served on a forward operating base in Afghanistan. I am proud of all my children.

I have always been a thrill seeker. For that reason I have been a downhill snow skier, scuba diver (including wreck, cave, and night dives), and skydiver. I flew with the Texas Air Aces and had a dog fight at 10,000 feet. I have run with the bulls in Pamplona, Spain three times. Nearly gored twice. I returned to Texas, bruised, bloodied, but head unbowed. It is that same sense of adventure that I try to take into the courtroom.

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