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## **Innovators and Early Adopters Are Embracing Blockchain**

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### **Is Blockchain Reaching an Inflection Point?**

The term “Blockchain” is used to encompass a vast amount of different technologies aimed at decentralizing and democratizing how value is transferred peer-to-peer. In most instances, when blockchain is referenced, what is being referred to is the incorporation and usage of a distributed record keeping system, governed by algorithms and math instead of central bankers and politicians. A blockchain is essentially a distributed ledger, held across a network of participants, instead of in one central location. We believe that with the numerous investments and pilots underway in the space, that the application of blockchain is reaching an inflection point that will take it to the next level of acceptance. There are many applications for blockchain that include the financial services industry, supply chain management, healthcare and legal ownership.

### **Cryptocurrencies Have Been the Focus to Date**

Over the course of 2017 to date, the 2 largest cryptocurrencies, Bitcoin and Ether have increased more than 400% and 4,000%, respectively. This increase is a testament to the more widespread adoption of digital currencies, as well as the broad interest in Initial Coin Offerings (ICOs). The performance of Bitcoin and Ethereum have created more legitimacy of the digital currencies as investments, despite the comments from some of their detractors.

Regulators around the world are still trying to sort out their views and approach to this market. Various countries and regulation announcements have created even more volatility, as was seen in mid-September when China announced a ban on ICOs and cryptocurrency exchanges, that resulted in Bitcoin falling by about 1/3 in the following weeks after the announcement.

### **Why Investors Should Focus on Blockchain?**

Blockchain has the potential to disrupt any industry that has relied on the centralized ledgers and the middle/back office to facilitate transactions or store data. Since the creation of the internet, the global business landscape has experienced a shift towards internet economy. The internet opened up global communication with the invention email and other communication protocols. Blockchain technology should be viewed as the next internet, evolving the current ways of transferring value, reducing counterparty risk, lowering transaction costs and embedding intelligence into contracts.

Traditionally, when anything of value is transferred from one party to another, there is a need for third parties, or “Middlemen”, to facilitate the transaction. This need for Middlemen is especially needed when the two parties conducting a transaction are unfamiliar to each other or in different places around the globe. These Middlemen, such as financial intermediaries, install an element of trust into the transaction and receive a fee for their asset transfer service. The transaction is then recorded by the Middlemen on their centralized ledger and is available for historical reference by both parties. This traditional way of conducting transactions has been globally used and accepted for many years.

Large global organizations have begun to embrace blockchain. Recently we have seen two announcements that we believe underscores that blockchain will go mainstream. On Friday, October 20, Mastercard announced that it has opened up its B2B blockchain payments tool to banks and merchants for wider use. In its press release the company stated its rationale as a bid to “address challenges of speed, transparency and costs in cross-border payments”. This followed IBM’s announcement a week ago that it has started processing payments over its own blockchain between banks in certain jurisdictions. These are just two recent examples of companies embracing blockchain and reinforce why we believe that investors should develop a better understanding. The initial focus has been on cryptocurrencies which is a significant portion of this report, but we also touch on some of the potential use cases more broadly.



## Blockchain Introduction

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Like the internet, blockchain will produce many investing opportunities for investors and will present a growing industry for investors to participate in. With the countless possibilities that this new opportunity presents, it is crucial that investors know and understand how the various applications of it can be leveraged.

Blockchain possesses many solutions to many of the inefficiencies that customers and businesses are experiencing today. These inefficiencies include slow transaction speeds, fraud, and vulnerability to internal and external tampering. After the 2008 financial crisis, a whitepaper was posted online under the alias, Satoshi Nakamoto, that proposed a decentralized currency, known as Bitcoin. The algorithm used in Bitcoin was the first to solve the double-spending problem that had baffled cryptographers for decades proceeding Bitcoin's release. Thanks to the algorithm, users of Bitcoin are able to transact without the risk of obtaining a fraudulent units of exchange. With the double-spending problem solved, Bitcoin pioneered the blockchain market into the growing market that we are experiencing today.

### What is Blockchain?

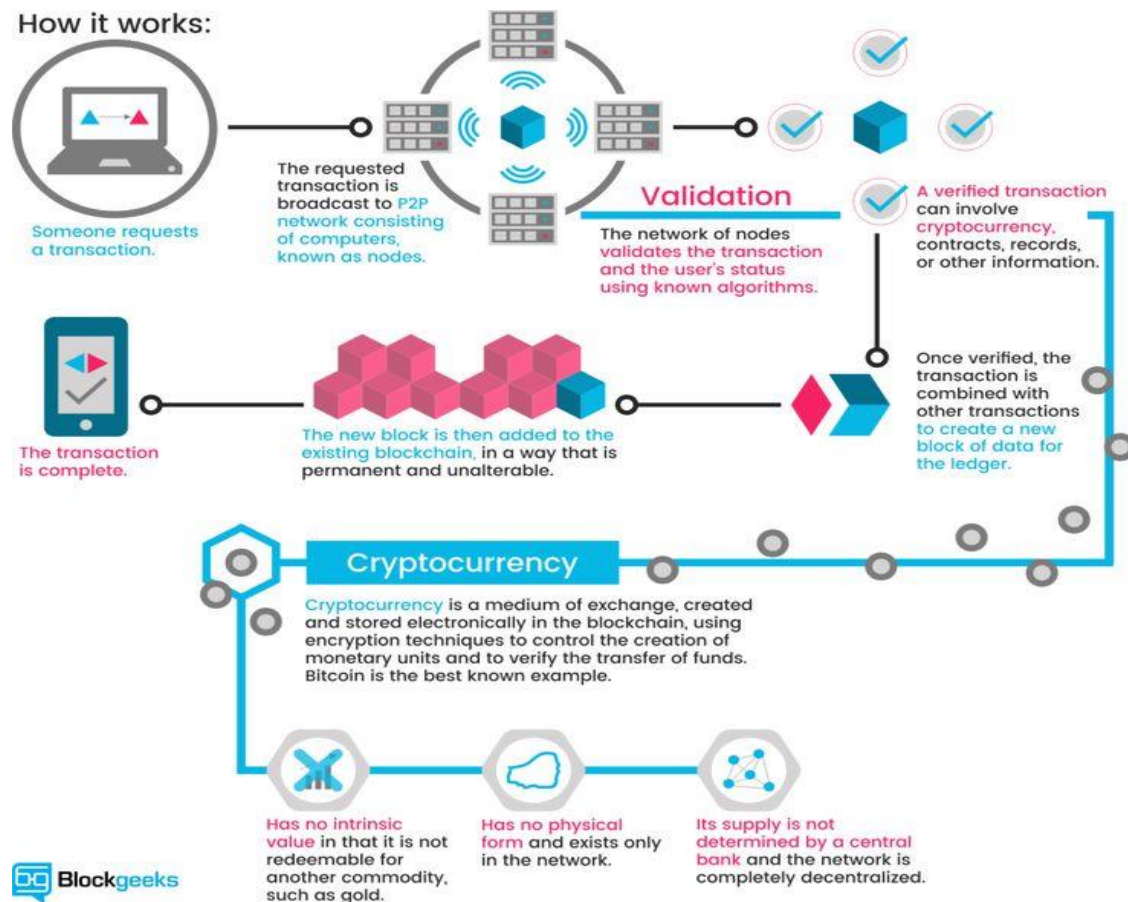
Blockchain is a distributed ledger technology that records transactions which cannot be altered. A blockchain is a decentralized database of records or what is referred to as blocks. Each block on a particular blockchain contains a hash pointer that links it to the previous block. Blockchains can be considered as a peer-to-peer decentralized network. Each participant on the network stores a replica of the add-only ledger that consists of digitally signed transactions.

Blockchains are stored across nodes/servers (networks) around the world that are responsible for validating the transactions, in a process referred to as "mining". The networks store replicas of the blockchains through a protocol known as consensus, thus eliminating the ability to alter any part of the blockchain. Since the blockchain is replicated on multiple computers there is minimal risk of failure.

For public blockchains, data miners compete to solve the computation equations that are required to validate each transaction before it will be added to the blockchain. In many cases, the miner that validates the transaction is compensated through the award of coins in a cryptocurrency. See more later on our discussion of cryptocurrencies.



Figure 1: Visual diagram of Blockchain



Source: Blockgeeks

The applications or uses of blockchain are very widespread, however the concepts of how it can be applied are in their infancy, in our view. To date, the primary applications of blockchain have been focused on applications within the cryptocurrency and transactions spaces. However, there are many more potential applications of the technology. Where we see the evolution is the advent of smart contracts. It is all about applying business logic on a blockchain.

With smart contracts, transactions of any complexity can be coded and can subsequently be authorized or denied based on the logic embeded in the network. As is outlined in Figure 2, the various use cases cross the following: digital currency, smart contracts, record keeping and securities. As more investments are made in the blockchain evolution, we believe that broader applications of its use will emerge. From our perspective, crytpocurrencies were innovators in one application of the blockchain. Going forward we believe that there will continue to be further innovation for uses of blockchain while also grabbing the attention of early adopters as various use cases evolve.

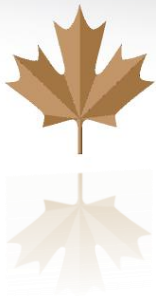
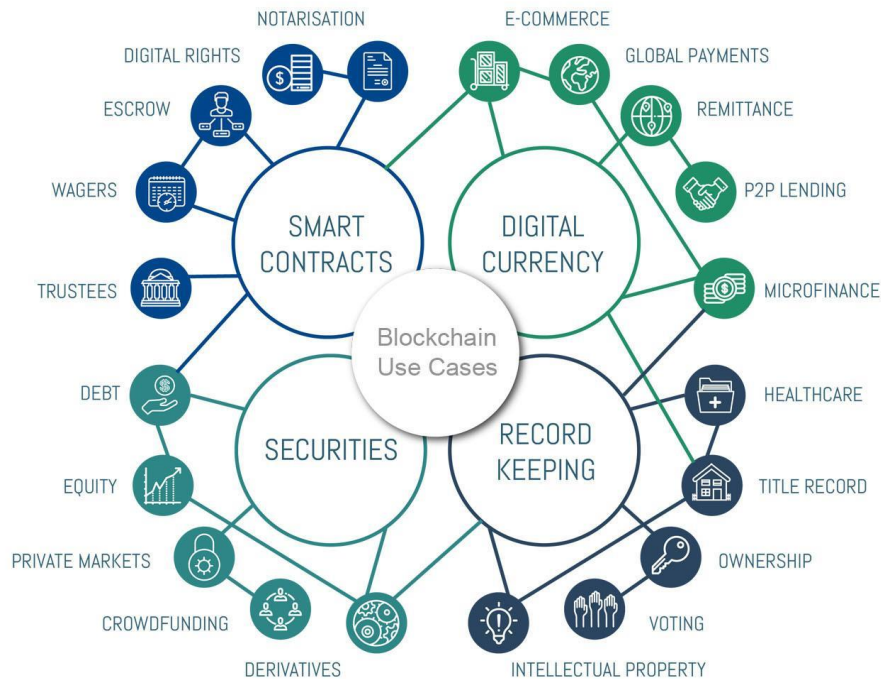


Figure 2: Blockchain Use Cases



Source: altcurrencyhelp.com

An interesting example of a blockchain use case is a supply chain. Imagine a decentralized ledger that can track all the items of your supply chain. And within seconds you can identify the parties involved in the production and distribution of a supply chain for an organization. A couple of months ago IBM announced that 10 food companies have signed up with them to share data and run trials. For food companies this would help identify and control any contamination issues that could have significant costs associated with them.

### Investment into Blockchain

In 2016, PwC estimates that \$1.4 billion was invested in blockchain related technologies. This was primarily done through venture capital funding. We believe that over the course of the next few years, there will be significant capital invested in blockchain, both privately and publicly. All of the major leading technology companies and consulting companies have created divisions for it, and devoted staff to their different development plans.

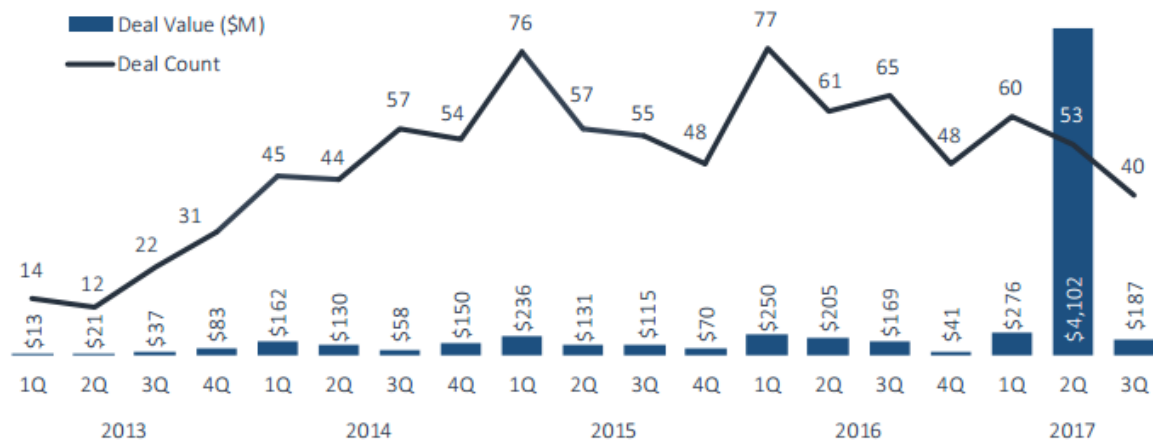
According to a Research and Markets report in April 2017, blockchain is estimated to grow at a 61.5% CAGR from 2016 to 2021 as more organizations focus on the transparency and scalability of the platform. Blockchain technology was originally introduced through cryptocurrencies (Bitcoin), which explains why investors so often confuse the terms blockchain and bitcoin interchangeably. However, there are many other applications of its use across a wide array of industries and use cases, aside from the current cryptocurrency focus.

PitchBook has labeled 2017 as the year that cryptocurrencies and blockchain become mainstream investments. The number of deals and the value of those deals in the blockchain industry companies is estimated by PitchBook in Figure 3. As can be seen, 2017 had a significant jump in Q2 as the result



of \$4.8 billion acquisition of DH Corporation by Vista Equity Partners. DH Corporation integrated blockchain technology into its global payment services in 2016. As a result, Vista Equity Partners merged it with one of its subsidiaries to create Finastra, a global fintech company. We view this transaction as evidence of where the financial services industry is evolving, and validation of the blockchain architecture.

Figure 3: Equity investments in blockchain industry companies



Source: PitchBook

### What is a Cryptocurrency?

Essentially, blockchain is the backbone that enables cryptocurrencies to exist. A cryptocurrency is a digital or virtual currency or token used to fuel applications or conduct transactions. The security is done with cryptography and part of its allure is that it is not issued by any central authority. One of the negative connotations of cryptocurrencies is that its anonymous nature lends to them being used for transactions that involve illegal activities such as drugs, weapons, money laundering, and tax evasion.

Contrary to cryptocurrencies notorious uses, one of the advantages of cryptocurrencies is that it makes it easier to transfer funds between two parties in a transaction. What enables this transfer is public and private keys that are used for security and validate the transaction. Given that these currencies exist on a public blockchain, all the transactions are stored on the open decentralized ledger.

Bitcoin, Ethereum, and Litecoin are just a few of the over 1,000 different cryptocurrencies trading on almost 6,000 different online exchanges. Cryptocurrencies have captured the attention of speculators, governments, major financial institutions, and technology companies. Every day, Initial Coin Offerings are raising millions of dollars to help fund projects in a crowd sales.



Figure 4: Top 10 Cryptocurrencies, priced as of October 20, 2017

Coin	Ticker	Price (US\$)	Market Cap (US\$M)	1 Week Return	YTD Return
Bitcoin	BTC	\$6,011.45	\$94,947.9	6%	466%
Ethereum	ETH	\$304.01	\$29,326.3	-10%	4046%
Ripple	XRP	\$0.21	\$8,287.6	-19%	3991%
Bitcoin Cash	BCH	\$327.44	\$5,527.9	2%	-22%
Litecoin	LTC	\$60.33	\$3,196.9	2%	1218%
Dash	DASH	\$289.19	\$2,254.4	-7%	2664%
NEM	XEM	\$0.22	\$1,988.5	2%	6050%
BitConnect	BCC	\$213.46	\$1,442.0	9%	134987%
NEO	NEO	\$27.75	\$1,433.9	-5%	20592%
Monero	XMR	\$90.54	\$1,315.2	-5%	581%

Source: Coinmarketcap.com

Despite earlier initiatives, the cryptocurrency that raised eyebrows around the world was Bitcoin. Initially, Bitcoin wasn't invented to be a currency, but to make online transactions easier for its users. The aim was to use computer coding and math to replace the need for financial intermediaries that were being trusted to conduct online commerce.

Limited amounts of cryptocurrencies are programmed and released for users to hold in their digital wallets, that can be taken offline to increase their security. These wallets are ledgers that display credits, and are debited when a cryptocurrency is being used to make a transaction. But where digital wallets differ than conventional bank accounts is that they can transact with each other without the need of a financial intermediary. Instead, digital signatures are used to ensure the feasibility of a transaction, with every transaction broadcasted out to the network that uses a consensus protocol to agree on the transaction then add it to the many different ledgers, held decentrally by other members on the network. The benefit of this is that one member is unable to reverse a transaction. Once the transaction is given the greenlight, it is added to the historical and immutable ledger, known as the blockchain.

### What are Forks?

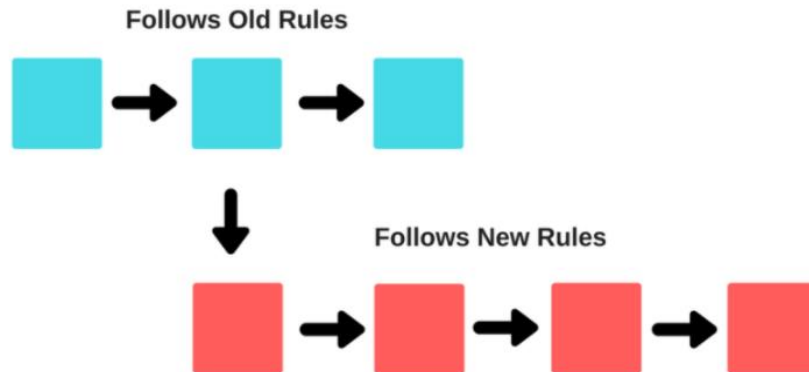
There are two possible solutions to scalability solutions on a blockchain: a soft fork, and a hard fork. A fork is when the current state of the blockchain diverges, essentially causing two routes with differing rules. According to Blockgeeks.com, a soft fork can be thought of as a software update to a blockchain. For example, if you use an older version of Microsoft Excel and need to update it, you can still view the older version of the software after the update because the new software is backwards compatible. This being said, all the features of the update would not be viewable from the earlier versions of the software.

Contrary to a soft fork, harks forks are not backwards compatible. Users that don't update are not able to interact with the user's that updated, and would also not be able to add any of the further updates to the forked version of the blockchain.





Figure 5: Visual representation of a fork



The primary difference between a soft fork and hard fork  
is that it is not backward compatible

Source: Blockgeeks

Forks are determined in a vote, either in a Miner activated vote, or a User activated vote. In a Miner activated vote, the decision is democratically decided by the Miners in a blockchain. In a User activated vote, the the active nodes are left to vote on the fate of the blockchain.

## Bitcoin

Bitcoin (BTC) was created in 2008 by a person or group that used the alias Satoshi Nakamoto. The idea was proposed in the whitepaper, "Bitcoin: A Peer-to-Peer Electronic Cash System", at a time where trust in financial markets was extremely low due to the Global Financial Crisis. In the whitepaper, the cryptocurrency, Bitcoin, was introduced and the original blockchain was explained. Nakamoto explained that they were concerned with the current way that intermediaries were included in online transactions. Additionally, how trust could be replaced with cryptographic proof, ultimately cutting transaction costs charged to users and their reliance on intermediaries.

As of October 20, 2017, Bitcoin's market cap was USD\$94.9 billion with the price of a Bitcoin at USD\$6011.45, up 466% year to date and 2,000,000% since it first started trading in March 2010. Bitcoin can be purchased on exchanges such as Bitstamp, Bitfinex, Coinbase, Cryptsy, BTC-e, Kraken, BTCChina, Bitcoin Source, as well as more than 50 other exchanges.



Figure 6: Bitcoin (in USD)



Source: Coindesk, Haywood Securities

### Mining

Similar to commodities such as gold or silver, there is a finite number of Bitcoins available for circulation. Bitcoin has a total of 21 million digital coins available for distribution. Each coin is divisible into one Satoshi, or 0.00000001 of a full Bitcoin.

Bitcoins are released into circulation at a stable and predictable rate through the process of mining. Bitcoin Miners allocate computational resources to solve math puzzles that are chronologically added to Bitcoin's blockchain. Miners are incentivized if they are the first to solve the problem and receive a reward for the successful addition of a new block to the blockchain. Transactions can also be prioritized by Miners by transactors paying higher fees, which is known as "replace-by-fee". Every 2,016 blocks, the difficulty of this math problem is adjusted so that one new block is added to Bitcoin's blockchain every ~ten minutes. This sort of speed limit is required so that the network cannot be spammed with fraudulent transactions.

If a Miner is successful in solving the math puzzle they are rewarded with Bitcoins. When the first block, known as the "genesis" block, was mined by Nakamoto on January 3, 2009, the reward was 50 BTC. The first halving to 25 BTC per block happened in November 2012, and the second to 12.5 BTCpB on July 9, 2016. This current reward for completing a block is 12.5 BTC and will be halved again to 6.25 on June 12, 2020 according to current calculations.





Figure 7: Cryptocurrency Mining Facility



Source: HIVE Blockchain website

### First Real-World Transaction

The first real world Bitcoin transaction occurred on May 22, 2010, where 10,000 BTC was exchanged for two Domino's pizzas. Four days prior, a person acting under the username "Laszlo" posted a request on a online Bitcoin forum, saying that if someone ordered two pizzas to Laszlo's house, he would send the person 10,000 BTC. A person acting under the username "Jercos" accepted this offer and the first transaction for a tangible good with Bitcoin was conducted. In May 2010, the 10,000 BTC was worth roughly USD \$41. As of October 20th, 2017, the closing price of BTC was USD\$6011.45, making the value of that pizza roughly USD\$60.1 million.

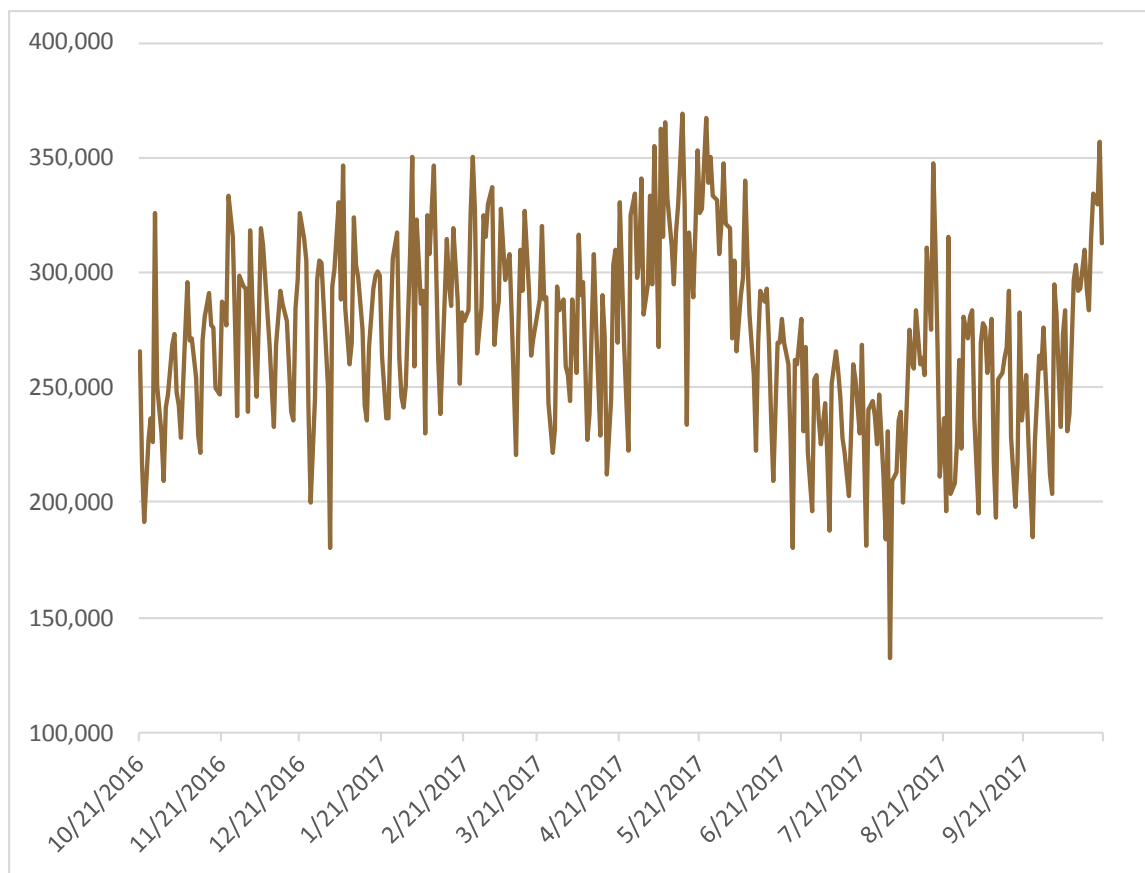
### Bitcoin Cash

On August 1, 2017, Bitcoin went through a "hard fork" that enabled it to create a new cryptocurrency, Bitcoin Cash (BCH). Some members felt that BTC shouldn't be used for small, everyday purchases, and that the small purchases were clogging up space in the blocks.

The votes were tallied and on block 479,808 the hard fork was implemented. On the BCH website, it says that, "Bitcoin Cash is peer-to-peer electronic cash for the internet. It is fully decentralized, with no central bank and requires no trusted third parties to operate." BCH does not have the "replace-for-fee" feature, offers a quicker way to adjust the block difficulty than the traditional BTC blockchain, and offers a blocksize of 8MB. Anyone who owned BTC that wasn't in an exchange, received the same amount of BCH.



Figure 8: Bitcoin Transactions per Day



Source: Blockchain.info, Haywood Securities

### Gaining Wider Acceptance

Over the past few years, more and more merchants have begun accepting Bitcoin for anything from groceries to webhosting services. Bitcoin is even being used in the real estate markets, with millennial clients using the cryptocurrency to exchange large amounts of money. In fact, the first home purchased with Bitcoin was through Kuper Sotheby's International Realty in Texas. Although Bitcoin's volatility makes it a highly speculative store of value, the cryptocurrency can make large transactions easier than many of the other options available.

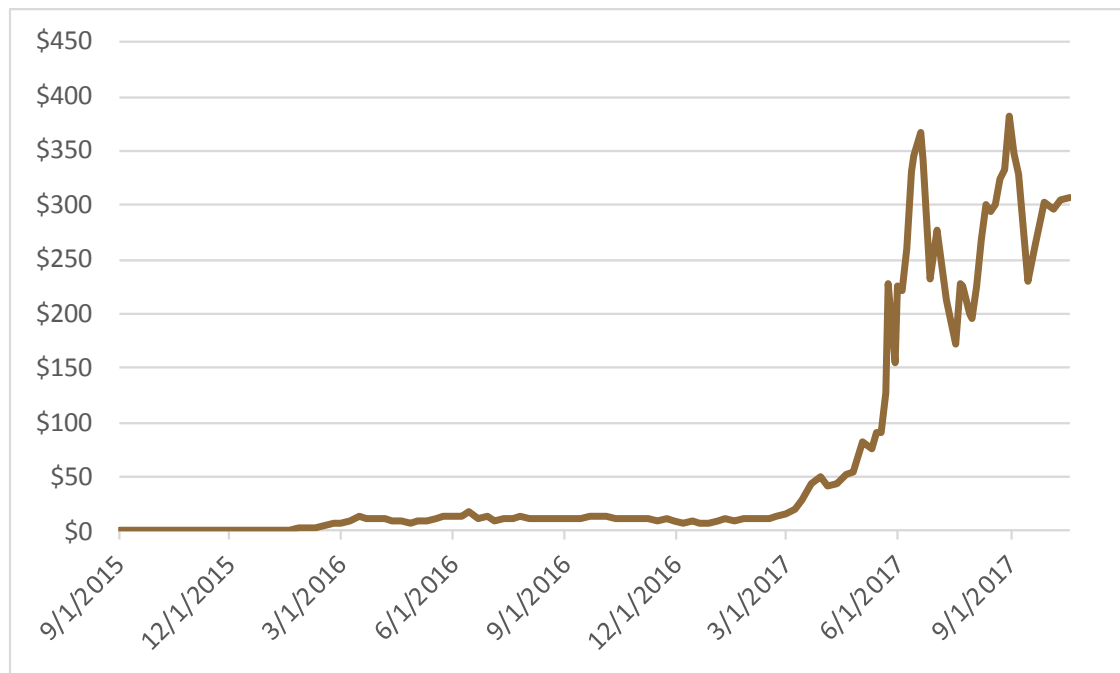
### Ethereum Overview

Ethereum is an open-sourced, blockchain based computing platform that runs smart contracts. The Turing-complete virtual machine, the Ethereum Virtual Machine, allows users to create scripts that use a global network of public nodes to create markets, store registries of debts and obligations, move value, and keep track of ownership of different assets. These scripts run exactly as programmed without any third party interruption or chance of being shut down.

Ethereum's cryptocurrency Ether's (ETH) market cap was USD\$29.3 billion and Ethereum Classic's (ETC) was USD\$1 billion as of October 20, 2017. The price for ETH closed at USD\$304.11 while ETC was USD\$11.34. Ethereum can be purchased on exchanges such as Coinbase, Kraken, Bitstamp, and Gemini as well as many other exchanges.



Figure 9: Ether (in USD)



Source: Coindesk, Haywood Securities

### History

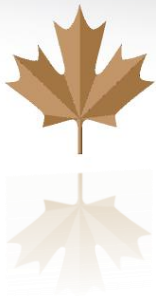
Ethereum was first described in 2013 in a white paper by Canadian Bitcoin programmer Vitalik Buterin. Buterin believed that Bitcoin's lack of a scripting language capable of the development of applications presented an opportunity for further decentralization. He began seeking out support for the issue and conducted an online crowd sale between July and August of 2014 which raised a total USD\$185M through an Initial Coin Offering. The project officially went live on July 30, 2015.

### DApps and Smart Contracts

As Bitcoin had aimed at disrupting the online payment industry, Ethereum aimed at going one step further to disrupt basically any centralized industries relying on third parties to facilitate transactions. These different industries include: data warehousing, escrow services, multi layered contracts, and any other services that are facilitated through third-parties. The purpose of this was so that users were no longer having to rely on companies, such as apple or google, that have the power, or are vulnerable, to any sort of shut down or influence of governments. These services are made possible because of Ethereum's creation of the decentralized application platform and the smart contract.

A decentralized application is an application that directly connects users to providers without the need of a platform being run by a third party. The Ethereum white paper splits DApps into three types: applications that manage money, applications where money is involved (but also requires another piece), and applications in the "other" category, which includes voting and governance systems.

A smart contract is a basically an "if-then" decision tree that automates the payouts in a contract in an immutable and transparent fashion. Once the parties in a smart contract agree on the conditions, the contract starts running and is transparent and immutable. Since the contract is on a blockchain, it is available for monitoring by the entire Ethereum community.



Smart contracts can store, send, and receive money. Almost any multilayered processes can be programmed into a smart contract, automatically triggering outcomes as the conditions in the contract are met.

Smart contracts are programmed into the Ethereum blockchain using a type of coding called Solidity. Solidity is also recognized in Microsoft Visual, a widely used program that computer developers use to design computer programs and applications. With the wider adaption of blockchain friendly coding, we are seeing barriers of entry falling which will aid in the overall scalability of Ethereum.

### **Ethereum Hard Fork**

In 2016, Ethereum forked due to the collapse of The Decentralized Autonomous Organization (DAO), an open-source, nationless investor directed venture capital fund. In June 2016, users were able to siphon a third of the funds raised due to a vulnerability in the code of The DAO. With much controversy, the Ethereum community hard-forked the Ethereum blockchain to restore the funds to The DAO. After the hard-fork, users were able to choose between the original blockchain, Ethereum Classic (ETC), and the newer blockchain, Ether (ETH).

## **Ripple Overview**

Due to the many regulations in the financial services industry, technology has been known to change slowly in the industry. Using the current SWIFT system, wire transfers are a costly and timely way to internationally transfer funds. Ripple has its sights on disrupting the international payment system and passing savings down to its customers. As of October 20, 2017, Ripple's (XRP) market cap was over USD\$ 8.2 billion, with a price of USD\$0.21.

Ripple is a real-time gross settlement system, currency exchange, and remittance network that has the potential to replace the internationally used SWIFT system. Ripple uses its cryptocurrency Ripple (XRP) to make international wire transfers at a fraction of the time and costs currently being delivered over the 44-year-old SWIFT system. Ripple's initial release was in 2012 and was adapted from Vancouver based web developer Ryan Fugger's Ripplepay. Unlike Bitcoin, Ripple uses an iterative consensus process that allows transactions to be quicker and less energy intensive than Bitcoin's mining process. Also, Ripple does not require a centralized exchange to convert currency, which eliminates the risk of an outage at an exchange that could constrict its users from cashing out.

## **Regulations**

### **Canada**

Canada's largest securities regulator, The Ontario Securities Commission, has voiced its support regarding ICOs and cryptocurrencies. In an effort to aid companies wishing to work within the crypto space, the OSC has put together a task force called The OSC Launchpad. The Launchpad has encouraged businesses to reach out to them to discuss how their offerings can be positioned to comply with the securities law. This positive tone that OSC has taken will surely affect the Canadian cryptocurrency and ICO market positively and should encourage companies operating in this space to incorporate in Ontario, exposing many investors to a new and different type of exposure.

### **United States**

Under the current tax regulations of the IRS, gains and losses on any transactions need to be reported in order to stay in compliance with tax laws. Due to the anonymity of cryptocurrencies, corporations and individuals can easily hide behind their digital wallets, making it difficult for tax agencies to crack down on hidden funds.



The March 2013 report released by the Financial Crimes Enforcement Network (FinCEN) sheds some regulatory light onto cryptocurrency exchanges and users. In the report, FinCEN offers clarification that users of cryptocurrencies do not classify as a money service business (MSB). However, an administrator or exchanger of cryptocurrencies are classified as MSBs. Under The Bank Secrecy Act of 1970, MSBs have to register, report and record-keep in order to stay in compliance with federal laws.

The SEC published a report in July 2017 on Initial Coin Offerings in an addressment of The DAO. In the report, the SEC concluded that tokens sold through a blockchain were in fact securities and could be subject to the same laws and regulations of traditional securities. Therefore, token sales for any decentralized autonomous organizations must be registered unless an exemption is declared.

### **China**

The cryptocurrency world was rocked on September 4, 2017, when the Chinese central bank announced the countrywide ban of ICOs and Bitcoin exchanges. The Central Bank ruled that the ICOs and exchanges were illegal due to the threat they were posing to capital controls. This ban is suspected to be temporary until appropriate regulations can be decided. Following the announcement Bitcoin dropped by approximately 1/3 over the next couple of weeks.

According to Pitchbook, as of late 2016, 90% of global Bitcoin / fiat conversion took place in Chinese Yuan. However, in 2017, China's position in the Bitcoin space has lessened due to growing interest from the United States, South Korea, as well as other countries.

### **Russia**

Earlier this month, a Russian Central Banker spoke towards banning all access to cryptocurrency exchanges due to the risks it exposed to retail investors. The statement caused a flash crash in the market, dropping the price of bitcoin by over USD\$600 before rebounding within ten minutes. Russia's view towards the cryptocurrency and ICO market is that it needs to be regulated. Russia also announced that it is going to create its own cryptocurrency, the CryptoRuble, and has been meeting with thought leaders in the blockchain space over the past month.



## Select companies with Blockchain exposure

### Select Public Companies:

**HIVE Blockchain Technologies (TSXV:HIVE, not rated)** - HIVE Blockchain Technologies Ltd. operates as a cryptocurrency mining firm that began trading on the TSX Venture in September 2017. The Company currently has two operational crypto-mining facilities that are strategically located in Iceland, and is constructing a third facility in Sweden. The Iceland assets were acquired from Genesis Mining, one of the pioneering miners of cryptocurrencies. Genesis is also constructing the third asset in Sweden. HIVE mines many cryptocurrencies, including Ethereum, Monero, and ZCash. The Company is currently based out of Vancouver, British Columbia.

**Acana Capital Corp. (CNSX:ACM, not rated)** – Acana has entered into a definitive agreement with Blockchain Intelligence Group to pursue a reverse takeover. Blockchain Intelligence leverages data analytics in order to map out transactions involving cryptocurrencies. The Company has two main products, BitRank and Qlue. BitRank uses data analytics to assign scores to digital wallets, helping users avoid transacting with criminals. Qlue is a tool for law enforcement that is used to detect suspicious transactions being conducted over the dark web. Pilot projects are currently being run with ICE, FinCEN, and BMO, with many more projects in their pipeline. The Company was founded in 2010 and is based in Vancouver, Canada.

**LeoNovus Inc. (TSXV:LTV, not rated)** - LeoNovus Inc., an enterprise cloud solutions software company that increases the safety data storage. By encrypting, fragmenting, and distributing data across nodes in the cloud, data is more secure and resistant to outages than on traditional servers. Leonovus's technology utilizes the company's own extra cloud storage to allow their data to meet many compliance codes that some industries require. Leonovus recently signed a proof of concept project agreement with one of Canada's 'big six' banks. Leonovus is headquartered in Ottawa, Ontario and was founded in 2008.

**RIOT Blockchain (Nasdaq: RIOT, not rated)**– Riot Blockchain, formerly Biotix, recently went through a strategic change and will be focusing on gaining exposure to the blockchain industry as a strategic investor. Riot Blockchain has conducted two investments in the blockchain space, Tess Inc. and Coinsquare Ltd. Tess Inc. is based out of Toronto, Ontario, and provides a blockchain payment escrow service through incorporating smart contracts into the wholesale telecommarket. Coinsquare, also based in Toronto, Ontario, is a Bitcoin, ethereum, and gold trading platform available on desktop, tablets, and mobile devices.

**360 Blockchain Inc. (CSE:CODE & C5B.F, not rated)**- 360 Blockchain invests in blockchain-based technology and they leverage their management experience in aiding entrepreneurs through the early stages of their companies. 360 Blockchain is currently seeking out investment opportunities in the following industries: ESports, Human Resources, Internet of Things, and Consumer Loyalty Programs. Headquartered in Vancouver, British Columbia, Blockchain 360 is publicly listed on the CNSX and the Frankfurt Stock Exchange and was founded in 2009.

**Global Blockchain Technologies Corp. (TSXV:BLOC, not rated)** – Global Blockchain is an investment fund that is aiming at becoming the first public blockchain company investing in vertically integrated originators and managers of top tier blockchains and cryptocurrencies. They aim on providing their investors with exposure to this growing industry in an easily accessible investment vehicle. Global Blockchain is managed by cryptocurrency and blockchain early adopters and is headquartered in Vancouver, British Columbia.





**Fintech Select Ltd. (TSXV:FTEC, not rated)** – Since 1999, Fintech Select has operated in the pre-paid card market before developing their business functions that compliment each other in the growing Fintech, pre-paid, and cryptocurrency spaces. Fintech Select has three main divisions: Pre-paid card programs, Mobile Banking & P2P Lending, and POS Cryptocurrency Solutions. Fintech Select is headquartered in Toronto, Ontario.

**NetCents (CNSX:NC, not rated)** - Netcents is evolving the electronic payment processing landscape by enabling merchants to support cryptocurrencies as well as traditional currencies through their platform. The tools that NetCents provides not only opens up new options to customers, but also helps lower companies payment risks. NetCents is also conducting an ICO, and releasing a token to be used in the service. NetCents is a registered MSB and is available for deposits from 194 Countries around the world. The company is headquartered in Vancouver, British Columbia and was founded in 2014.

**Big Wind Capital Inc. (CNSX: BWC, not rated)** – Big Wind Capital recently announced that it will acquire various interests in Hill Top Security, including its Vauban platform, the FIPS-FIAR compliant, military-grade cyber security solution for small-medium businesses. Hill Top is also conducting new product development that incorporates blockchain technology into different cryptocurrency applications. Run by a team of security experts with military and commercial backgrounds, the Company holds Top-Secret level security clearance based on the work it carries out for the American Government. Hill Top Security is a certified Service Disabled Veteran Owned Small Business, based in McLean, Virginia and was founded in 2009.

**Private:**

**eXeBlock Techonlogy Corp.** – eXeBlock Technology Corp. develops and operates blockchain software, focusing on decentralized applications (DApps). eXeblock will launch ‘white label’ DApps for use by organizations and corporation on a per-use revenue stream. eXeBlock currently has two DApps under development, eXe50/50 Draw and Freedom Ledger. The Company was incorporated in 2017 and is headquartered in a recently declassified nuclear bunker in Debert, Nova Scotia.

**TessPay.io** – As mentioned in above, TessPay provides a blockchain payment escrow service through incorporating smart contracts into the wholesale telecommunications market. The Company is increasing the efficiency and decreasing payment risk of the global telecom. industry through building and incorporating smart contracts into global telecom transactions. By leveraging this business model, TessPay will later focus on implementing similar smart contracts into other global supply chain transactions. TessPay is based out of Toronto, Ontario and released its whitepaper in August 2017.

**First Block Capital Inc.** – FirstBlock Capital is Canada’s first fully registered cryptocurrency investment firm. The Company recently received approval by the BCSC to create FBC Bitcoin Trust, Canada’s first Bitcoin Trust, a way to invest in Bitcoin without the hassle of securing and storing large amount of cryptocurrency. The Canadian Bitcoin Trust is an open-ended unit trust fund that invests exclusively in Bitcoin. First Block is headquartered in Vancouver, British Columbia.



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	%	#	IB Clients (TTM)
Buy	72.4%	71	96.8%
Hold	11.2%	11	3.2%
Sell	0.0%	0	0.0%
Tender	1.0%	1	0.0%
UR (Buy)	0.0%	0	0.0%
UR (Hold)	0.0%	0	0.0%
UR (Sell)	0.0%	0	0.0%
Dropped (TTM)	15.3%	15	0.0%