BLOCK CHAIN

Technology **Applications** History numbers get started





While a popular subject, the majority of people including bankers, traders, scientists, and deve have a very limited understanding about crypto currency and blockchain technology in general. A blockchain is a decentralized, distributed and

A biocontain is a determinated, unsinduced and public encrypted digital ledger/database that is used to record transactions, or any information, across many computers so that the record cannot be altered retroactively without the alteration of all subsequent blocks and the consensus of the network.



lidates the transaction and user's status using a athematical algorithm. The blockchain only contains validated and encrypted info/transactions which prevents multiple reording, tampering of the info of double spending for currencies. The validation process relies on data being encrypted using algorithmic hashing. The resulting encrypted value is a series of numbers and letters that does not resemble the original data and

Miner rig

Mining is the process of verifying and adding transaction records or info to the blockchain. For cryptocurrencies it is also how new coins are released. Anyone with sufficient computing power can participate in mining. The mining process involves compiling recent transactions into blocks to solve mathematical algorithms, crypto-time next block on the blockshain and daims the rewards. The rewards for minins could be fees and/or for cryptocurrencies the newly released coin or part of it.

When someone

### ES AND SUPER NO

A hash function is any function that can be used to map data of arbitrary size to data of a fixed size. The values returned by a hash function are called hash values, hash codes, digests, or simply hashes. Hash functions are often used in combination with a hash table, a common data structure used in computer software for rapid data lookup. Hash functions accelerate table or database lookup by detecting duplicated records in a large file. One such application is finding similar stretches in DNA es. They are also useful in cryptography.

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ANTAGES OF BLOCKCHAIN (TODAY)

Privacy because the info is shared in the peer to peer

Security no bullet proof system (Bitcoin, Ethereum\*)

Slower verification and encryption (size of the chain)

Complexity & cost for business to access technology

Cost of running the network (computer power)

Limited Scalability (Storage & power constraints)

Young technology, cultural adoption

Access to external data, integration

Unsustainable consensus system (today)

Private blockchains

Access is permissioned. One

cannot join it unless invited by the

network administrators Participant and validator access is restricted.

1.

2.

3.

4.

farming

a areen

most

record the journey is

Public blockchains

become a validator.

No access restrictions, Anvone

with an internet connection can

send transactions to it as well as

Limited data capacity

Uncertain regulatory status

Today educated consumers and governments are

pressuring marketers to commit to environmental

unalterable blockchain technology is perfect for

trusted trackability of the supply chain

and social sustainability practices. Transparent and

Consortium blockchains

Semi-decentralized & permissioned. Instead of a single entity controlling it, a number of companies might each operate a node on the network. The consortium chain admin restricts users' reading rights and allows a limited number of trusted nodes to execute a consensus protocol.

## NTAGES OF BLOCKCHAIN

- High quality data
- Transparency (transactions open to network)
- Privacy because no centralized controlling entity
- Security with multi-levels of encryption and keys Simplification, integrity, immutability, reliability
- 5. Cost per transaction
- 6. 7. Faster transaction time
- 8.
- 9.

ΔΓ

1

2

3.

4.

- 10.
- 11.

THE BEST CMS\* WEBSITE

Seriously, you should ask yourself this question as it will help you determine the budget needed to build your Blockchain platform. We are willing and able to help you whenever you are ready to start. Beyond blockchain technology we provide integrated business process management systems: CRM, ERP, HR, SEO, SMO, LEADS, etc...

## To get ahead of your competition you need an online strategy that

changes the way you communicate with your employees, partners and customers. You have to integrate web management and marketing tools into your business.



Our CMS packages start at \$1950



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Starting a business powered by Blockchain, or starting to use Blockchain technology in your existing business, is just like adopting a newer system with all the positive and negative aspects to using a nascent technology. Many applications of Blockchain are still on the drawing board or in their beta version. A lot of entrepreneurs have found uses for blockchain in their projects and have raised a considerable amount of funding. The factors of time/speed, as well as trend, are crucial with Blockchain. The most important task at this stage is to find a business/activity with a problem that Blockchain technology could resolve or improve drastically.

# tep

IT, MAKE IT, OR USE AN OPEN SOURCE

Now that you found an industry application and/or a business process problem to resolve with Blockchain technology you have to choose if you want to use an available platform or if you want to build one. If you want to use an existing platform you can buy one or use an open source. In both cases you need to do extensive research to choose the one that fits your purpose and your budget (recurring fees). Finally, if you decide to build your own or to build on a open source platform you will need a full-stack developer with expertise in web technology like JavaScript, C++ and an understanding of modern cryptography, hashing, algorithm, P2P , and software life cycle.

# Step 3

Except for a few hiccups with crypto-currencies, blockchain is a web technology to reckon with. While it is still nascent, blockchain has a promising future. It is being featured by the media and everyone is talking about it, including potential investors. A good programmer capable of building or modifying a blockchain platform will cost you around \$150k-\$200k/year but financing your project will not be so difficult as there are currently more investors than there are projects if you have the right idea. Building a Blockchain platform might not be rocket science but it requires professional skills, discipline and comes with a lot of responsibility regarding coding. Particularly if your new platform deals with crypto-currency and/or sensitive data.

## Step 4

You have a great idea that can be accomplished using Blockchain ner it would and you've got the financing. Before you hire a progra be great for you to take an accelerated course about Blockchain technology or and crypto-currency. Without going indebt w accelerated coding and cryptography course proposed by MIT, Princeton, Harvard, or IBM you could find a seminar about getting more knowledge of how to use Blockchain for business. Confident of your acquired knowledge it is time to create a blue-print / specification book and get started on a dev. server to create a proof of concept. Technical expertise and passion for your project will do the rest. Many forums are available on the internet about the subject

# Step 5

### TEST AND LAUNCH YOUR BLOCKCHAIN, OR NOT

Find potential security, performance and networking problems and bugs using the proof of concept. Fix then test and test again (dev, alfa, beta..) unt everything works like a charm. Have other programmers test it until you have a stable and fully functional platform. Before you start the whole process you have to ask yourself, do I really need a Blockchain? At this stage unless you have the idea for a Blockchain application that no one else has thought about, it might not be what you need. Give us a call at (727) 725 1333 and we will tell you if Blockchain is right for you and give you a choice of alternative solutions it we sincerely think it is not. Although very trendy and great for limited data, Blockchain is not always the answer. Current public and private blockchain platforms have experienced scaling and security issues so it isn't tomorrow that they will replace standard databases like SQL or Oracle for business.

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5 6. 7. 8. 9 10. 11.

Auditability Trustless Anonymous No censorship-control (today) CH MONEY DO YOU WANT TO MAKE

# **CRYPTOCURRENCY (727) 725-1333**

## TOOLBOX

## 50 CRYPTOCURRENCIES THAT ARE STILL STANDING

	Name	Market cap 08/18		Circulating #	Max/cap #	Code
	Bitcoin	\$ 108,247,848,082.00	\$6,291.46	17,205,525	21,000,000	BTC
	Ethereum	\$ 32,383,281,653.00 \$ 11,871,762,423.00	\$319.74	101,279,523		ETH
	Ripple XRP Bitcoin Cash	\$ 11,871,762,423.00 \$ 9,825,794,630.00	\$0.30 \$575.34	39,299,874,590 17,289,125	21,000,000	XRP BCH
	EOS.IO	\$ 9,823,794,030.00 \$ 4,590,231,803.00	\$575.34 \$5.17	906,245,118	1,006,245,120	EOS
	Stellar	\$ 4,110,739,342.00	\$0.22	18,771,403,505	1,000,243,120	XLM
	Litecoin	\$ 3,428,861,173.00	\$59.31	57,814,609		LTC
	Cardano	\$ 2,914,244,117.00	\$0.11	25,927,070,538	31,112,483,745	ADA
	Tether	\$ 2,411,623,515.00	\$1.00	45,497,850	01,112,100,110	USDT
	Monero	\$ 1,535,748,785.00	\$93.65	16,266,706		XMR
	ΙΟΤΑ	\$ 1,505,798,781.00	\$0.54	2,779,530,283	2,779,530,283	ΜΙΟΤΑ
2017		\$ 1,486,140,266.00	\$0.02	65,748,111,645	99,000,000,000	TRX
2015	Eth. Classic	\$ 1,392,807,017.00	\$13.43	103,731,680		ETC
2014	Dash	\$ 1,364,532,015.00	\$167.48	8,253,521		DASH
2014	NEO	\$ 1,204,783,334.00	\$18.54	65,000,000		NEO
2018	Binance coin	\$ 1,113,998,141.00	\$11.66	95,512,523		BNB
2014	NEM	\$ 981,962,160.00	\$0.11	8,999,999,999		XEM
2018	Tezos	\$ 936,805,800.00	\$1.54	607,489,041	763,306,930	XTZ
2016	Zcash	\$ 722,706,678.00	\$158.48	4,560,131		ZEC
2018	OmiseGO	\$ 564,924,709.00	\$4.03	140,245,398		OMG
2018	VeChain	\$ 505,997,145.00	\$0.01	55,454,734,800		VET
2018	0x	\$ 465,520,913.00	\$0.87	537,585,815	1,000,000,000	ZRX
2017	Qtum	\$ 418,040,122.00	\$4.71	88,810,608	100,810,648	QTUM
2017	Lisk	\$ 363,561,769.00	\$3.34	108,979,378	124,224,052	LSK
2017	Bitcoin Gold	\$ 345,370,197.00	\$20.11	17,174,649 BTG	17,274,649	BTG
2016	Decred	\$ 343,086,253.00	\$41.46	8,274,957		DCR
2012	Bytecoin	\$ 333,336,507.00	\$0.00	183,890,481,254		BCN
2017	Maker	\$ 318,372,364.00	\$476.44	668,228		MKR
	BitShares	\$ 308,688,766.00	\$0.12	2,649,980,000		BTS
	DigiByte	\$ 289,299,925.00	\$0.03	10,650,817,327		DGB
	Dogecoin	\$ 278,148,538.00	\$0.00	15,683,245,320		DOGE
	Zilliqa	\$ 273,565,523.00	\$0.04	7,567,552,268		ZIL
	ICON	\$ 266,815,175.00	\$0.69	387,431,340	800,460,000	ICX
	Verge	\$ 204,408,745.00	\$0.01	15,172,086,051		XVG
	Waves platform	\$ 193,933,285.00	\$1.94	100,000,000		WAVES
	Auroracoin	\$ 100,405,140.00	\$0.19	11,266,323		AUR
2013		\$ 77,262,216.00	\$0.07	998,999,942		NXT
	Peercoin	\$ 52,224,358.00	\$0.07 \$2.12	24,905,199		PPC
	Namecoin	\$ 36,120,426.00	\$2.45	14,736,400		NMC
	Vertcoin	\$ 35,224,848.00	\$0.77	45,498,025	84,000,000	VTC
	Primecoin	\$ 23,149,991.00	\$0.95	24,563,085	0 1,000,000	XPM
	Feathercoin	\$ 1,659,923.00	\$0.06	209,244,600		FTC
	Gridcoin	\$ 8,414,020.00	\$0.02	390,312,753		GRC
	Synereo AMP	\$ 7,473,220.00	\$0.07	100,728,564		AMP
2017	BitConnect	\$ 6,676,022.00	\$0.68	9,819,280	10,591,865	BCC
2014	PotCoin	\$ 6,550,486.00	\$0.03	220,440,826		POT
2011	SwiftCoin	\$ 994,227.00	\$0.26	3,884,635		BITS
2014	MazaCoin	\$ 332,158.00	\$0.00	1,055,345,280		MZC
2014	Titcoin	\$ 120,135.00	\$0.00	49,898,202		TIT
		Parta A				

OK, after reading this info chart you know a little more about Blockchain technology and Cryptocurrencies and you want to enter the game.

### W TO GET CRYPTOCURRENC

You have two ways to get a cryptocurrency, mining it (read page 1) or purchasing it (there might be another way if you are an extremely good hacker). Assuming you do not have the skills to steal it or the time and resources to mine it you can always purchase it on a cryptocurrency exchange website. For your convenience we have listed some below. The best advice in choosing an online currency exchange is to look at the size (amount of transactions/users), the time they have been in business, and the type of exchange: are they Crypto to Crypto\*? It is entirely up to you to choose the one you trust the most, with E-currency there is no failsafe nor guaranties. E-currency exchange websites Hong Kong based Bitfinex reimbursed over \$17 million in bitcoins after being hacked, and Gemini is the first exchange insured by the FDIC.

### E-CURRENCY EXCHANGE WEBSITES

NAME	FOUNDED	LOCATED	SIZE	ТҮРЕ
<u>Coinbase</u>	2011	US, EU, AU, ASIA	\$\$\$\$\$	Fiat/Crypto
<u>Gemini</u>	2014	us	\$\$\$\$\$	Fiat/Crypto
Binance	2017	China, Japan	\$\$\$\$\$	Crypto/Crypto
Bitfinex	2012	Hong Kong	\$\$\$\$\$	Crypto/Crypto
<u>Kraken</u>	2011	Canada, EU, Japan	\$\$\$\$	Crypto/Crypto

If you are a criminal or simply want to trade under the radar you may want to avoid these exchanges, even if they are probably safer and easier to use, as they are also the most controlled by the US, EU and Chinese governments. If you prefer to be anonymous feel free to search the dark web not Google. Today most exchanges propose to provide you with a Wallet to store your crynocurrencies.

### Although you need a wallet to trade cryptocurrency coin values they are not technically stored in your wallet. The wallet is just a piece of software that analyses the blockchain and allows you to transfer and receive coin values. This piece of software (wallet) can be on your computer, on the cloud (in someone else's computer) or even in a USB key in your pocket or personal safe. With your wallet you receive 2 keys (passwords). The first is the public key which is the address where people send you coin values. The second is a secret key which allows you to access your coin values and sign your transactions on the Blockchain.

### GLOSSARY

**TYPE OF WALLETS** 

Crypto to Crypto = trade/exchange between 2 crypto currencies Crypto to Flat = trade/exchange between crypto currencies & fiat money. Flat money = a government-backed currency.

Address or public key = a string of alphanumeric characters used to send or receive transactions, A Block = a package of permanent data carried on the Blockhain. Token or cryptocurrency = representation of a digital asset. Consensus = when all participants of a network agree on the validity of a transaction. Genesis Block = the first block of the Blockhain. Mining = the act of validating a transaction resolving algorithm puzzle. Node = a copy of the ledger maintained by a network participant. Peer to peer = an interaction between parties in a decentralized network. Proof of Work = the original consensus algorithm in a Blockchain. Hesh = cap used to confirm transactions in the block of data.

### CONCLUSION

Although cryptocurrencies opened the eyes of many regarding Blockchain technology, and became a POW (proof of work) that currency deem't have to be controlled by a centralized entity, it is not yet working as it should and here is why: As many I am seduced by the idea of escaping the globalized control of what we do with our money but the catch 22 is that without any control everyone can create an initial coin offering (ICO) to create a new currency. Over the past 8 months, 8004 cryptocurrency projects have failed and investors have lost all their investments (there is no failsafe with cryptocurrency). https://deadcoins.com. Beside the fact that Bitcoin has no intrinsic value, except perhaps for speculation and illegal activities, a little common sense and a bit of googling will tell you that Bitcoins are accepted almost nowthere as a mean of payment which is normal as a currency that can fluctuate between 10-20% on adily basis cannot be used in regular store transaction. Another inconvenience to using bitcoins as a means of payment transfer is that is very slow and sometimes takes 1 hour to confirm a transaction. On the other end, it is how a minority of people became billionaires by investing in the promises of this new crybot-currency Eldorado but it is a huge "minori aux alouettes". 1500+ currencies for a 300 billion market cap equal to the US efficit with China. The real question is which currency will you have in your e-wallet in 2020 to go buy your morning baguette or anything else for the matter?) Lepsonally think the immutable and transparent blockchain technology could be used today to solve trust issues in supply chain traceability & other simple applications in need of impartiality, proof of property and time stamping. E-currencies will take much more trial and error, successes and failures.

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SSOURCES (useful links)

TUNEL BEAR If you need a proxy MYTH BUSTER Investor's point of view OPINION A recent article on the Wallstreet Journal SOUTH KOREA is full legalization of cryptocurrency a good thing?

INDUSTRY NEWS

COINMARKETCAP Cryptocurrency market cap and other info website BLOCKCHAIN by MIT The blocks in Blockchain

AND THE WINNER IS Someone found a way to make money with crypto-currencies

IBM BLOCKCHAIN Blockchain for Dummies, the IBM version. The richest in cryptocurrency Forbes list of the richest in cryptocurrency

The information complied in this document is to give you a general idea of Biocichain technology and cryptocurrencies. Data on the table above were complied on August 2013 when this document was published. Due to the volatility of the cryptocurrency, exchange nor waltet webtate and the links includent in this document was published. Due to the volatility of the cryptocurrency, exchange nor waltet webtate and the links includent in this document are just for informational purposes. All information completed on the table above were complied on August 2013 when this document was published. Due to the volatility of the cryptocurrency market you should be charted to agree and reference purpose. Use document are provided as information compared to the cryptocurrency classifier as the cryptocurrency exclusion are provided as information compared to the cryptocurrency exclusion are provided as information compared in this info-chart is coughly protected. You can devine all the data that a blare tab agree are not authorated to sell it. All links to other website and mention to trademarket approved base information are provided as information and an other website and mention to trademarket and when the second as a provided as information and an other website and mention to trademarket and the tab second are provided as information and and the second as information and provide as information and provide as information and provide as information and an other website and mention to trademarket and the second as a second as information and an other second as a second as a information and approvement on filter and the second as information and as a second as a information and and the second as a second as a information and an other second as a second as a information and and the second as a second as a information and as a second as a information and and and the second as a second as a information and and and the second as a second as a information and and and the second asecond as a information and asecond asecond as a secon

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