



# **Introduction to Blockchain (Part II)**

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# Table of Contents

- ICO (Initial Coin Offering)
- Token Economy
- Cryptocurrency
- Cryptocurrency Exchange
- Concluding Remarks

## ■ Initial Coin Offering (ICO):

- ICO is a means of crowdfunding, through the creation and sale of a digital coin or token to fund project development.
- No government regulation
- China and Korea do not allow ICOs

## ■ Initial Public Offering (IPO):

- [IPO](#) refers to the public sale of the shares of a company for the first time, with the purpose of collecting funds for business expansion and development.
- Strong regulation by local government

# Initial Coin Offering (ICO) vs. Initial Public Offering (IPO)



IPO = Initial Public Offering

Source: <https://www.quora.com/What-is-the-difference-between-an-IPO-and-an-ICO>

# History of ICOs



Source: <https://blockchainhub.net/ico-initial-coin-offerings/>

- <https://blockchainhub.net/blog/infographics/history-and-evolution-of-icos-infographic/>

- New economy created by the concept of sharing, incentivizing, crypto tokens via ICOs using blockchains
- 3 types of Tokens
  - **Payment Tokens** – used as a means of currency or payment (e.g., Bitcoin, Ether)
  - **Securities Tokens** – **digital assets of** ownership of public & private equities, debt, real estate, etc. (e.g., Digix)
  - **Utility Tokens** - provide users with access to an application of service (e.g., Golem Token)

- A **cryptocurrency** is a digital currency which is used for the sole purpose of making or receiving payments on Blockchain
  - e.g., Bitcoin
- **Altcoins** are the various alternative cryptocurrencies that were launched after the massive success achieved by Bitcoin
  - e.g., Litecoin, BitcoinCash, Namecoin and Dogecoin
- **Crypto tokens** are special kind of virtual currency tokens that reside on their own blockchains and represent an **asset** or **utility**
  - e.g., Filecoin



# Cryptocurrencies by Market Capitalization



## Top 100 Cryptocurrencies By Market Capitalization

Cryptocurrencies ▾

Exchanges ▾

Watchlist

USD ▾

Next 100 →

View All

#	Name	Market Cap	Price	Volume (24h)	Circulating Supply	Change (24h)	Price Graph (7d)	
1	Bitcoin	\$111,036,100,955	\$6,447.14	\$3,713,460,007	17,222,525 BTC	-0.26%		...
2	Ethereum	\$28,404,202,642	\$279.95	\$1,231,167,874	101,463,278 ETH	-3.53%		...
3	XRP	\$13,026,767,657	\$0.330860	\$289,355,394	39,372,399,467 XRP *	-1.49%		...
4	Bitcoin Cash	\$9,200,124,868	\$531.65	\$315,203,133	17,304,850 BCH	-2.96%		...
5	EOS	\$4,371,421,370	\$4.82	\$423,277,133	906,245,118 EOS *	-5.05%		...
6	Stellar	\$4,088,843,286	\$0.217805	\$61,704,232	18,772,926,391 XLM *	-2.13%		...
7	Litecoin	\$3,242,201,990	\$55.96	\$207,906,412	57,942,573 LTC	-0.15%		...
8	Tether	\$2,736,350,778	\$1.01	\$2,460,566,741	2,722,140,336 USDT *	0.16%		...
9	Cardano	\$2,428,468,911	\$0.093665	\$56,492,248	25,927,070,538 ADA *	-5.06%		...
10	Monero	\$1,525,057,648	\$93.35	\$20,933,197	16,336,936 XMR	-3.26%		...

Source: <https://coinmarketcap.com/>

# Cryptocurrencies

Crypto-currency	Launch	Aim	Consensus Mechanism	Technological Peculiarities	Privacy	Transactions per second
Bitcoin (BTC, XBT)	01/2009	Purely peer-to-peer version of electronic cash	PoW	UTXO model, SegWit, 1 MB block size, hash SHA-256	No	7
Bitcoin Cash (BCC, BCH)	08/2017	Lower fees and more reliable confirmations than bitcoin	PoW	Fork of bitcoin, increase of max. blocksize to 8 MB	No	60
Litecoin (LTC)	10/2011	Instant, near-zero cost payments to anyone in the world	PoW	Fork of bitcoin, decrease of block generation time to 2.5 min	No	56
Ripple (XRP)	09/2012	Real-time gross settlement system, currency exchange and remittance network	Consensus of supermajority	Permissioned, public blockchain	No	1,500
DASH	01/2014	Instant, private, secure payments	PoW, Proof of Service	2-tier-network including miners and masternodes	Yes	28
OmiseGO (OMG)	07/2017 (ICO)	Unbank the banked	PoS	Plasma-based blockchain running on Ethereum	No	-
Iota (MIOTA)	11/2015 (ICO)	Fee-less, highly scalable transactions for IoT	Accumulated transaction weight	Tangle (Directed Acyclic Graph)	Only for data	500-800

PoW = Proof of Work

PoS = Proof of Stake

# Smart Contract Platforms

Platform	Launch	Aim	Consensus Mechanism	Technological Peculiarities	Privacy	Transaction per Second (roughly)
Ethereum (ETH)	07/2015	Build unstoppable applications	PoW, Casper (PoS)	Raiden, Plasma, Sharding	No	25
NEO	2014	An Open Network For Smart Economy	dBFT	66% agreement of bookkeepers finalizes a block	No	10.000
Cardano (ADA)	09/2015 (ICO)	Feature-rich, highly scalable smart contract platform	Ouroboros (dPoS)	RINA	Yes	200
Qtum	03/2017 (ICO)	Stability, interoperability, and modularity	PoS	Combination of modified Bitcoin Core with an altered version of the Ethereum Virtual Machine	No	70

dBFT = delegated Byzantine Fault Tolerance

dPoS = delegated Proof of Stake

RINA = Recursive InterNetwork Architecture



## BITCOIN WALLET TYPES AND FUNCTIONS

### SOFTWARE WALLET

BITCOIN ARMORY IS THE MOST POPULAR, STABLE AND SECURE SOFTWARE WALLET



### WEB WALLET

WEB WALLET ADD A LEVEL OF CONVENIENCE THAT SOFTWARE WALLET CAN'T SUCH AS BEING ABLE TO ACCESS YOUR FUNDS FROM ANY DEVICE



### COLD WALLET

COLD WALLET ARE SIMPLY ANY KIND OF BITCOIN WALLET THAT ISN'T CONNECTED TO THE INTERNET



PAPER WALLET

USB DRIVE



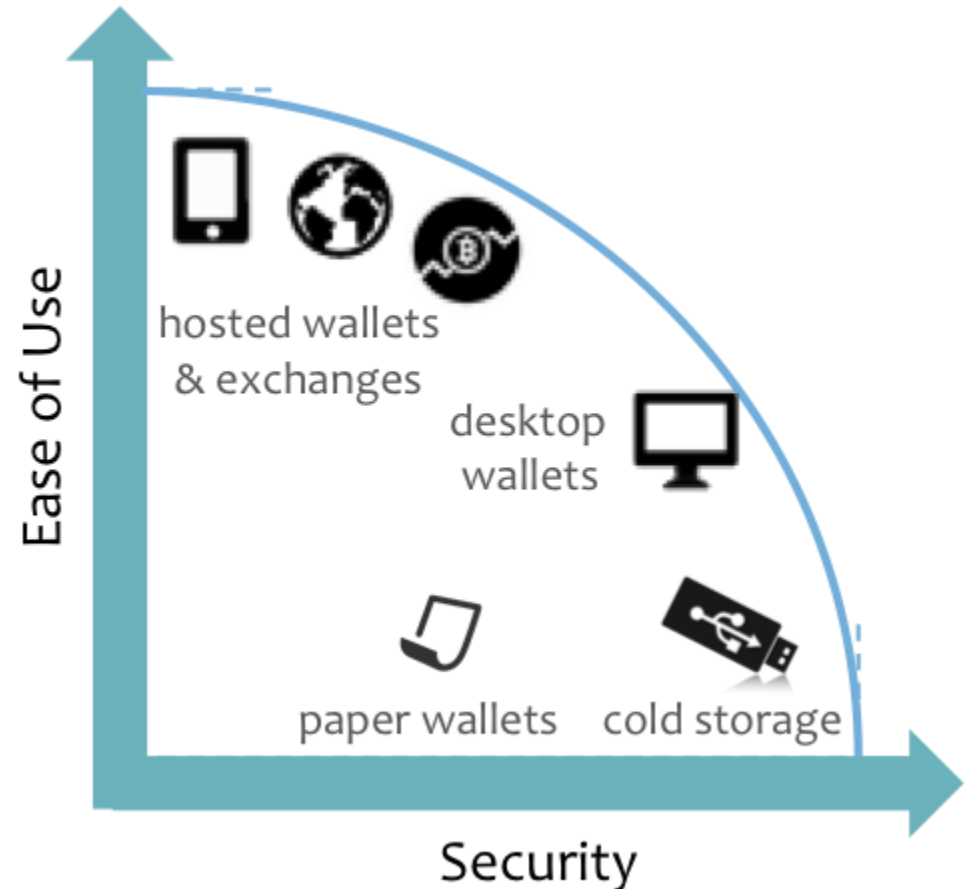
### BRAIN WALLET

A COMPUTER MAKES UP A PASS PHRASE OF RANDOM WORDS THAT THE USER COMMITS TO MEMORY



### HARDWARE WALLET

THAT CAN ONLY BE ACCESSED WITH PHYSICAL CONTACT TO THE WALLET HAVE HIT THE SCENE THIS YEAR



Source: <https://i.stack.imgur.com/6ZCyt.png>

Source: <https://cointelegraph.com/storage/uploads/view/df5b95e155ca91306394db1c659c87a6.jpg>

# Cryptocurrency Exchange

- Also called **digital currency exchange (DCE)**
- Allows customers to trade cryptocurrencies or digital currencies for other assets such as fiat money (USD, KRW) or other digital currencies
- DCEs in Korea
  - Coinone, Upbit, Bithumb
- DCEs in other countries
  - Binance, OKEx (Hong Kong)
  - Huobi (Singapore)
  - Bittrex, Coinbase, Kraken (USA)
  - Bitstamp (Luxembourg)



# Coinone Crypto Exchange

[←](#)
[→](#)
[↺](#)
Secure | <https://coinone.co.kr/exchange/trade/btc/>

[거래소](#)
[프로차트](#)
[코인원특](#)
[고객센터](#)
[더 보기](#)

₩ 7,781,000
318,300
[마이페이지](#)
[로그아웃](#)

거래 가능
0 KRW
0 BTC
0 BCH
0 ETH
0 ETC
0 XRP
0 QTUM
0 LTC
0 MIOTA
0 BTG
0 OMG
0 EOS
0 DATA
0 ZIL
0 KNC
0 ZRX
0 XTZ

₩ BTC
BCH
ETH
ETC
XRP
QTUM
LTC
IOTA
BTG
OMG
EOS
DATA
ZIL
KNC
ZRX
XTZ
프로차트

₩ BTC 거래

최소 0.0001 BTC 부터 주문 가능

1m

3m

5m

15m

30m

1H

2H

4H

6H

1D

1W

7,939,000

7,750,000

7,800,000

7,781,000

15:00

18:00

21:00

8/30

3:00

6:00

9:00

12:00

15:00

T 2018/08/30 14:45

O 7,800,000

H 7,807,000

C 7,781,000

L 7,781,000

V 10.8166

차트 숨기기

모아보기

현재 호가 단위 1000

클릭주문

매도주문	매도잔량	가격	매수잔량	매수주문
	0.05	7,801,000	현재가	7,781,000
	0.2901	7,800,000	전일가	7,826,000
	0.28	7,799,000	전일대비	-45,000 / -0.58%
	0.05	7,796,000	고가	7,910,000
	0.9931	7,795,000	저가	7,781,000
			거래량	998

매수

매도

주문유형

지정가 주문

주문수량

매수 수량

최대

주문가격

7,792,000

▲ ▼

주문금액

0 KRW

암호화폐	가격	거래량	전일대비	특
₩ BTC	7,781,000	998	-0.58%	
BCH	609,000	1,622	-1.22%	
ETH	318,300	10,065	-0.84%	
ETC	14,350	32,750	-0.35%	
XRP	377	13,143,154	-1.82%	
QTUM	5,190	218,158	-3.17%	
LTC	67,250	3,885	-1.68%	
IOTA	763	4,477,931	-5.10%	
BTG	79,250	42	-0.75%	
OMG	4,630	21,209	-5.32%	
EOS	6,600	785,884	-3.37%	
DATA	43	4,974,313	-2.27%	
ZIL	48	14,433,884	-4.00%	
KNC	627	18,666	-2.49%	
ZRX	894	47,751	+1.36%	
XTZ	1,510	148,984	-1.31%	

거래 자산현황

-

화폐	거래가능	거래중	자산
거래 자산이 없습니다			

회원등급

-

적용수수료	Maker	Taker
Lv.1	0.1%	0.1%

Show all

×

bithumb logo.jpg

upbit logo.jpg

coinone logo.png

14



# Cryptocurrency Exchange vs. Stock Exchange

	Crypto Exchange	Stock Exchange
<b>Profit &amp; Loss-Making Margins</b>	Can be very large and fast	Usually small and slow
<b>Reach</b>	Universal	Domestic
<b>Transaction Fee</b>	Very small	Higher
<b>Operation Hours</b>	24/7 – non-stop	Typically 9am to 3:30pm Mon. to Fri.
<b>Asset Supply</b>	Limited	Unlimited
<b>Control Authority</b>	None	Government
<b>Trading Risks</b>	Risky	Safer

# The need for Blockchain experts

- **Base knowledge for learning blockchain**
  - Data structures, algorithm, cryptography, networking, programing, etc.
- **Can I get a job by learning blockchain?**
  - The future is bright!



...



- **ICO (Initial Coin Offering)** is a new way to raise funds for startups
- **Token Economy** is a new economy that has been associated with ICOs and startups using Blockchain
- **Cryptocurrency** is an example (or killer app so far) of Blockchain
- Multiple **Cryptocurrency Exchanges** per country have been established around the world as an essential part of Token Economy
- Blockchain experts are sought by industries around the world

## ■ Blockchain

- <https://www.youtube.com/watch?v=r43LhSUUGTQ>
- <https://www.youtube.com/watch?v=97ufCT6lQcY&t=231s>
- BlockChain Technology Beyond Bitcoin, UC Berkely, Oct. 2015,  
<https://scet.berkeley.edu/wp-content/uploads/BlockchainPaper.pdf>

## ■ Bitcoin

- Satoshi Nakamoto (2008). *Bitcoin: A Peer-to-Peer Electronic Cash System*.
- <https://news.bitcoin.com/a-guide-to-what-a-bitcoin-fork-is-and-why-they-happen/>

## ■ Ethereum

- <https://ethereumreport.org/2017/10/23/proof-of-stake-explained/>

## ■ Distributed Ledger Technology

- [https://en.wikipedia.org/wiki/Distributed\\_ledger](https://en.wikipedia.org/wiki/Distributed_ledger)

## ■ Use Cases

- I. Fiedler, F. Fiedler, L. Ante (2016). *Die Vision eines integrierten Energiemarktes*. (A Vision of an Integrated Energy Market). Blockchain Research Lab.

## ■ ICO

- <https://www.quora.com/What-is-the-difference-between-an-IPO-and-an-ICO>
- <https://blockchainhub.net/blog/infographics/history-and-evolution-of-icos-infographic/>
- <https://strategiccoin.com/3-types-ico-tokens/>
- 

## ■ Cryptocurrencies and Platforms

- <https://en.wikipedia.org/wiki/Bitcoin>
- [https://en.wikipedia.org/wiki/Bitcoin\\_Cash](https://en.wikipedia.org/wiki/Bitcoin_Cash)
- <https://en.wikipedia.org/wiki/Litecoin>
- [https://en.wikipedia.org/wiki/Ripple\\_\(payment\\_protocol\)](https://en.wikipedia.org/wiki/Ripple_(payment_protocol))
- [https://en.wikipedia.org/wiki/Dash\\_\(cryptocurrency\)](https://en.wikipedia.org/wiki/Dash_(cryptocurrency))
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- <https://en.wikipedia.org/wiki/Ethereum>
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- <https://steemit.com/cryptocurrency/@nrek/the-real-next-neo-is-here-meet-cardano-and-ada>
- <https://en.wikipedia.org/wiki/Qtum>
- <https://cointelegraph.com/news/qtum-launches-first-ever-blockchain-node-into-space>

## ■ Token Economy

- <https://www.cryptocompare.com/coins/guides/token-economies-101-the-difference-between-tokens-and-coins/>
- <https://www.investopedia.com/terms/c/crypto-token.asp>
- <https://filecoin.io/>
- <https://golem.network/>

## ■ Crypto Wallet

- <https://blockgeeks.com/guides/cryptocurrency-wallet-guide/>