



Creative
Energy

Introduction to blockchain applications in industry

with a focus on financial services

By Marc Lijour

Novembre 9, 2020

The Art and Science of Eternal Blossom



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1 The Nature of Money

2 Bootstrapping utility platforms: mining, ICOs, and IEOs

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- Market size

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Textbook definition of money

- a medium of exchange
- a unit of account
- a store of value



Money by the pound

- in medieval europe, money didn't have face value
- people would negotiate the value of money
- “pound” comes from the fact that 240 silver pences weighted about a pound



Representative money

Alyattes of Lydia, father of Croesus, is famed to be the first monarch to issue coins around 600 BC. The river Pactolus carried Electrum, a gold and silver alloy, and it was easier to trust a stamped value on a coin than measuring the weight of metal for every trade.

Later, Charlemagne unified the coinage around the silver penny, before seigneurs and bishops started to mint their own coins, extracting brassage and seigniorage.

- Brassage: amount equivalent to the cost of minting
- Seigniorage: a tax



Fiat money

Fiat money is defined by government regulation, regardless of the value of the underlying commodity.

- debasement is possible (e.g. using less precious metals, augmenting the quantity of money in circulation)



Gresham's law

When two currencies co-exist, bad money drives out good money (e.g. Lebanese pound & US Dollar in Lebanon).



The Gold standard

- from the 13th century to the 19th century, paper bills gained adoption
- after the Civil War, the US guaranteed the convertibility of bank notes
- the gold standard ended after the first world war, when countries such as Germany depreciated their paper money to pay their debt
- European countries rekindled with the gold standard during the interwar
- those that left the gold standard earlier received economic advantages
- after the 2nd world war, the Bretton Woods system has countries peg their currency to the US Dollar
- in 1971, Nixon ends the convertibility to gold and the Bretton Woods system



Banks

- central banks progressively appeared in the last two centuries
- governments leveraged monetary policy to achieve (or not) social outcomes (e.g. inflation in the 70s and 80s to increase employment)
- central banks claim independence from the state, taking over monetary policy
- banks are too big to fail (2007 crisis)
- central banks are adopting “unconventional policies” such as quantitative easing (buying securities on the open market), weakening the reserve requirements (banks must maintain), and lowering interest rates (eventually into negative territory)
- Bitcoin appears



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Bootstrapping

- What is the first blockchain network?
- Who funded it's launch?



From Altcoins to all types of coins

CRYPTOLIST

Lists FAQ Blog Roadmap

Explore 2,558 Cryptocurrencies

A customizable directory of cryptocurrencies with descriptions, properties, and metrics.

Save List

Search

Showing 2558 cryptocurrencies

Favorites

Show only

Market Cap

24h Volume

Cryptocurrency Type

Consensus Method

Premine %

#	Name	Symbol	Price	Market Cap	24h Volume	1h %	24h %	7d %	Updated	Circulation	Total Supply	Max Supply
1	Bitcoin	BTC	\$5,323.06759547	\$94,004,442,199	\$13,942,335,721	-0.27%	0.68%	3.98%	5 minutes ago	17,659,825	17,659,825	21,000,000
2	Ethereum	ETH	\$169.947775411	\$17,974,810,067	\$5,820,222,406	-0.73%	0.70%	3.70%	5 minutes ago	105,766,669	105,766,669	∞
3	Ripple	XRP	\$0.3228086067	\$13,548,518,703	\$1,038,544,410	0.00%	0.71%	-0.28%	5 minutes ago	41,970,748,057	99,991,649,568	100,000,000,000
4	Bitcoin Cash	BCH	\$289.45193186	\$5,135,593,665	\$1,146,009,008	-0.66%	1.92%	-6.43%	5 minutes ago	17,742,475	17,742,475	21,000,000
5	EOS	EOS	\$5.2275246293	\$4,928,030,368	\$1,825,231,318	-0.41%	1.23%	-3.43%	5 minutes ago	942,708,207	1,042,708,210	1,000,000,000
6	Litecoin	LTC	\$78.4510999571	\$4,698,195,973	\$2,592,857,726	-0.25%	0.78%	-4.48%	5 minutes ago	61,453,609	61,453,609	84,000,000
7	Binance Coin	BNB	\$24.3056197789	\$3,431,267,788	\$235,270,959	-0.74%	1.31%	25.53%	6 minutes ago	141,175,490	189,175,490	200,000,000
8	Tether	USDT	\$1.0067113101	\$2,613,225,659	\$11,594,540,667	-0.12%	-0.06%	0.20%	6 minutes ago	2,595,804,411	2,750,057,493	∞
9	Stellar	XLM	\$0.1128233891	\$2,184,688,494	\$237,175,071	-0.30%	1.47%	-2.43%	5 minutes ago	19,363,613,444	104,902,369,331	∞
10	Cardano	ADA	\$0.0749182717	\$1,942,411,316	\$79,787,409	-0.77%	3.37%	-9.50%	5 minutes ago	25,927,070,538	31,112,483,745	45,000,000,000
11	Tron	TRX	\$0.0250677015	\$1,671,566,283	\$358,260,088	-0.20%	1.55%	-6.43%	5 minutes ago	66,682,072,191	99,281,283,754	100,000,000,000
12	Monero	XMR	\$68.2285580424	\$1,155,361,704	\$103,503,379	-0.08%	-0.09%	3.74%	6 minutes ago	16,933,697	16,933,697	∞
13	Dash	DASH	\$121.751298628	\$1,067,050,684	\$263,470,233	-0.13%	1.24%	1.44%	5 minutes ago	8,764,183	8,764,183	18,900,000
14	Bitcoin SV	BSV	\$57.7436743878	\$1,024,396,511	\$108,511,954	0.49%	2.48%	-10.50%	5 minutes ago	17,740,411	17,740,411	21,000,000
15	Tezos (Pre-Launch)	XTZ	\$1.330338419	\$879,526,698	\$4,402,469	0.19%	0.81%	21.21%	6 minutes ago	661,130,044	791,757,531	∞

Marc Lijour

Blockchain Developer Certificate

Novembre 9, 2020

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Definitions

Cryptocurrency (Oxford dictionary)

a digital currency in which encryption techniques are used to regulate the generation of units of currency and verify the transfer of funds, operating independently of a central bank.

Initial Coin Offering (ICO)

a fundraising mechanism leveraging the issuance of a cryptocurrency.

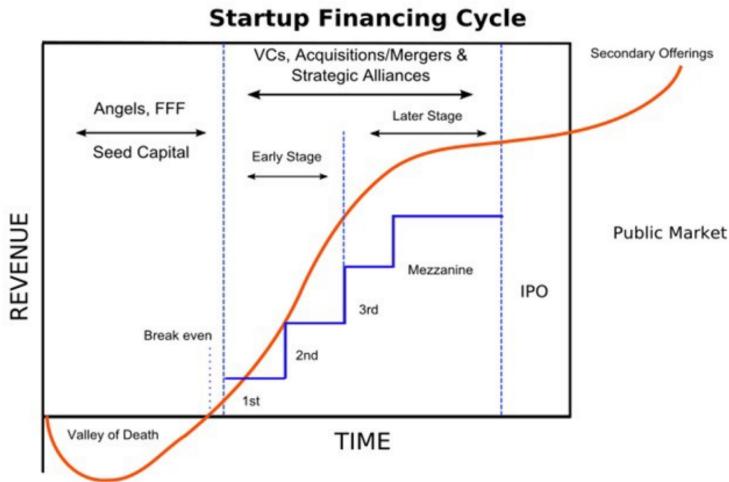
Also called Initial Token Offering (ITO).

Initial Exchange Offering (IEO)

a fundraising mechanism leveraging a cryptocurrency exchange.



How startups are raising funds



(*) Red line = Earnings of a startup. Source: "Technological Entrepreneurism" — Mario W. Cardullo (1999)



IPO vs. ICO

IPOs

- need a prospectus
- need an underwriter (big bank e.g. JP Morgan)
- sales on exchanges
- regulatory constraints

ICOs/ITOs

- white paper
- anyone can launch a sale
- anyone can buy from anyone
- no limitation allowing schemes such as "pump and dump"



Average IEO Returns by Exchange Platforms

Current and ATH Average Returns since IEO (ROI) by Exchange Platforms in USD

Sort by Current ROI

IEOs date

01 Jan 2019

09 Nov 2020

Amount of analyzed IEOs: 127

Share

Widget

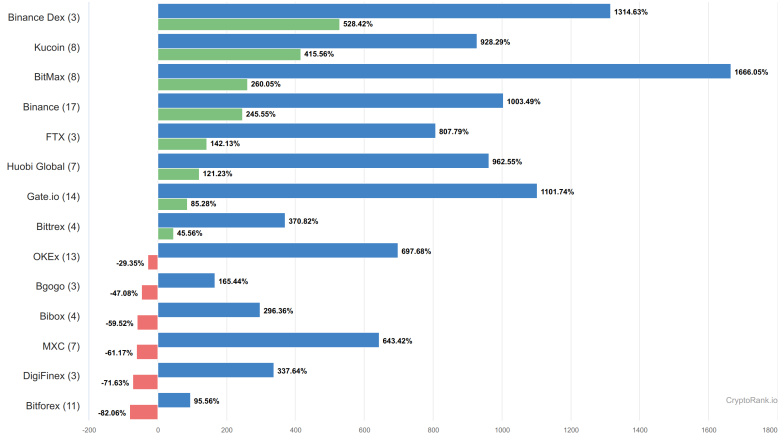


Figure: extract from Cryptorank (Nov 9, 2020)



IEO vs. ICO

Initial Exchange Offering (IEO)

- register with an exchange
- pay a fee and a % of coins
- sales happen on the exchange
- regulatory burden for the exchange
- marketing and promotion on the exchange

ICO

- true peer to peer
- no fees to intermediaries
- anyone can buy from anyone
- regulatory burden on the promoters of the ICO
- developers have to promote themselves

See <https://cryptonews.com/guides/what-is-an-initial-exchange-offering.htm>



Who buys into ICOs?

Discussion



Notable ICO scams



Notable ICO scams

- the team runs with the investor's money (e.g. Modern Tech's Pincoin ICO)



Notable ICO scams

- the team runs with the investor's money (e.g. Modern Tech's Pincoin ICO)
- misrepresentation of the team (e.g. fake founders in the case of Benebit)
- Ponzi schemes (e.g. Ponzicoin –it's in the name!; Plexcoin promised a 1,354% return to US and Canadian investors)
- market manipulation (e.g. "pump and dump")
- marketing schemes (e.g. Kodack coin, Centratch ICO backed by DJ Khaled)



And the laws says. . .

SEC (US Regulator)

Framework for “Investment Contract” Analysis of Digital Assets (2019)

OSC (Ontario Regulator)

OSC Investor Guide to Crypto Assets (2019)



A few instruments and tools

In 2017, the SEC provided guidance on the sale of token, indicating that it would be (most likely) treated as a security.

The Howey test

Simply put: if it looks like an investment, then it is one.

The Howey Test refers to a 1946 case which reached the Supreme Court, SEC v. W.J. Howey Co., involving the Howey Company of Florida.

Investment contracts

A promise to return a profit on an investment.



A few instruments and tools

SAFT

A Simple Agreement for Future Tokens (SAFT) is an assumed investment contract (a security) that brings clarity to the sale of Blockchain-based securities.

User receives documentation and access to the future token sale. It's not a debt instrument.

SAFE

A Simple Agreement for Future Equity (SAFE) allows to accept funds that can be converted to equity at a later stage.

Failure of the SAFT framework

Post wrote good summary of the evolving SEC position and actions, including the case of Kin and Telegram, which signals the limitation of SAFT (2020).

The state of ICOs today

- ICOs paved the way for IEOs and STOs
- Mid-2019 the global crypto market cap. was about USD \$370 bn (pwc, 2020)
- More than 380 token offerings in 2019, raising more than USD\$4.1 bn (pwc, 2020)
- Avalanche

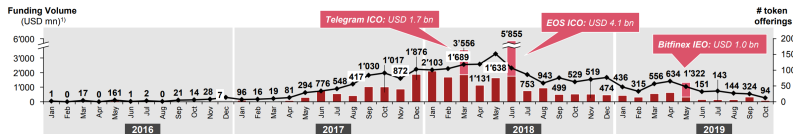












Figure: extract from pwc (2020)



Countries with most token offering traction

LEADING¹⁾ TOKEN OFFERING COUNTRIES IN 2019 YTD²⁾

Country	Total Raised (USD mn) ³⁾	Total # Closed Offerings ³⁾
 HONG KONG	1'009	4
 CAYMAN ISLANDS	238	6
 UNITED ARAB EMIRATES	149	3
 SINGAPORE	110	11
 UK	98	11
 ESTONIA	96	13
 LIECHTENSTEIN	80	1
 USA	66	9
 GERMANY	57	6
 RUSSIA	44	4

LEADING¹⁾ TOKEN OFFERING COUNTRIES IN 2018











Country	Total Raised (USD mn) ³⁾	Total # Closed Offerings ³⁾
 CAYMAN ISLANDS	4'997	25
 BRITISH VIRGIN ISLANDS	2'294	21
 SINGAPORE	2'109	147
 USA	1'456	96
 UK	916	93
 SWITZERLAND	894	69
 ESTONIA	651	73
 HONG KONG	428	39
 LITHUANIA	282	11
 CANADA	248	17

Figure: extract from pwc (2020)



Finding the right balance

Let's discuss

Democratization of access to capital

What is the best way to let small investors access lucrative investment opportunities generally available to accredited investors and large portfolio owners?

Support for innovation

What is the best way to allow startups to access the capital they need at a reasonable cost?

Protection of the investors

What is the best way to protect investors against evil market manipulations? (Let's discuss some of those)



Other approaches to coin offerings

- Initial Bounty Offering
- Security Token Offering (more details later)
- Initial Exchange offering
- ...



Market Size

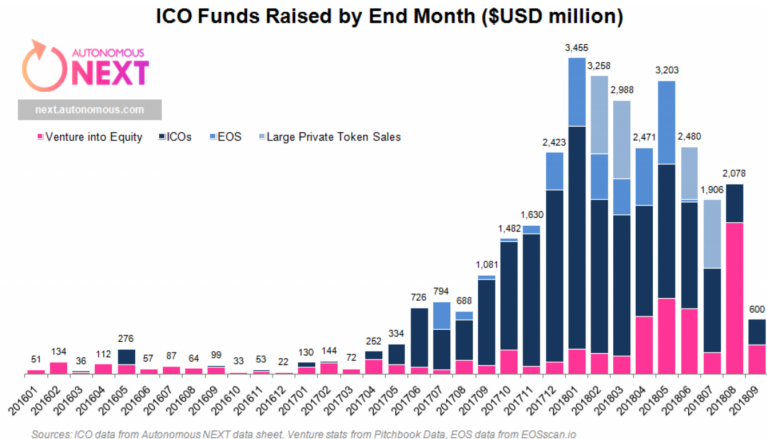


Top 10 ICOs

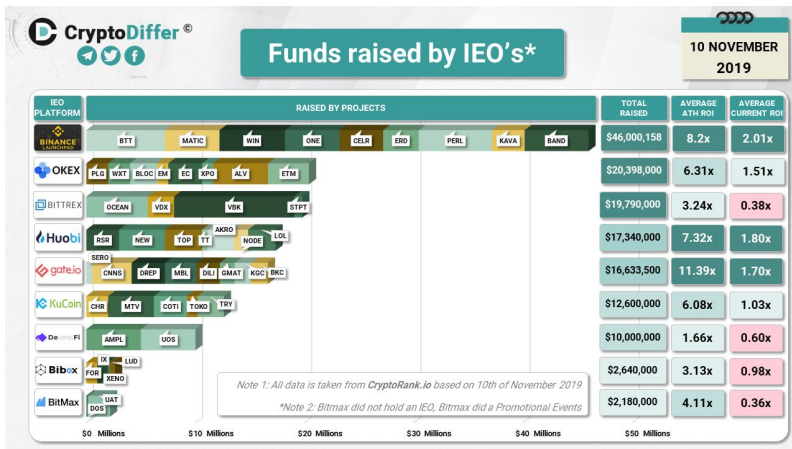
	⬆ Amount Raised	⬆ ICO Dates	⬆ Project	⬆
EOS	\$4.1 billion	6/26/17 - 6/18/18	Smart Contracts	
Telegram	\$1.7 billion	01/18-02/18	Encrypted Messaging & Blockchain Ecosystem	
Dragon	\$320 million	02/15/18 - 03/15/2018	Decentralized Currency for Casinos	
Huobi	\$300 million	01/24/18 - 02/28/18	Cryptocurrency Exchange	
Hdac	\$258 million	11/27/17 - 12/22/17	IoT Contract & Payment Platform	
Filecoin	\$257 million	08/10/17 - 09/10/17	Decentralized Cloud Storage	
Tezos	\$232 million	07/01/17 - 07/14/17	Self-Amending Distributed Ledger	
Sirin Labs	\$158 million	12/16/17 - 12/26/17	Open-Source Blockchain Smartphone	
Bancor	\$153 million	December 6, 2017	Prediction Markets	
The DAO	\$152 million	05/01/17 - 05/28/17	Decentralized VC	



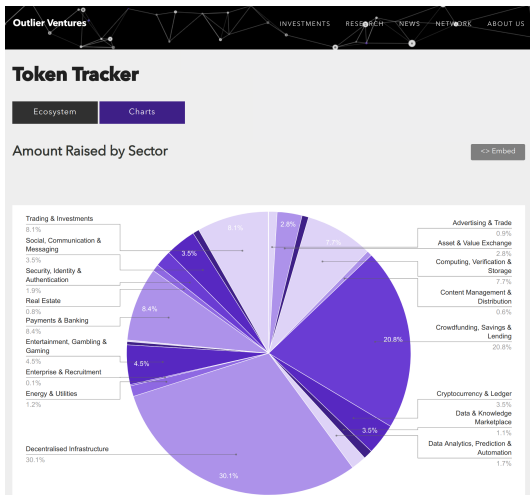
Proportion of funds raised through ICOs



Proportion of funds raised through IEOs



Funding by Industry



References

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Who buys into ICOs/IEOs?

Elements of a white paper



General considerations

Be careful with your money

Any investment requires due diligence. Ask yourself what the investor gets for his/her money?

Guarantees

How confident are you the team will complete its end of the bargain?
What are the available recourse when they do not?

Compliance

Is this legal? What are the risks and the administrative burden on the investor side?



Team

- Do these people exist?
- Do their roles and credentials match the domain of expertise?
- Did they agree to be featured?
- How much are they involved in the project? (100% time – 0.001% time?)
- Are they credible? Can they pull it off?
- Which company is backing this project (if any)?



Project

- Does it have any kind of business or social value?
- What is the business model (including token economics)?
- Is it achievable? (There should be a sensical roadmap)
- How much research and development has already been done so far?
- How many users are currently using the system (if any)? (is there a MVP?)



Technology

- Why do we need Blockchain for that?
- Is Blockchain (and other) technology used appropriately?
- What is the underlying Blockchain platform? (e.g. Ethereum, Waves)
- How are the engineering constraints addressed? (e.g. throughput in tps, scalability, saturation, cost of transactions, interoperability)
- How maintainable and sustainable the solution is?
- What is the approach to ensure an acceptable level of security?



Governance and Use of the proceeds

- What does the team plan to do with the funds?
- What is the governance model?
- What's in there for the investor?
- Is the financial model realistic?
- Are legal and compliance risks thoroughly assessed and discussed?



ICO process

- How is the token issued? (e.g. through an exchange)
- Are all investors treated fairly? (e.g. similar value/risk ratio, unreasonable pre-sale discounts to a certain class of investors)
- Do the founders have an unfair advantage? (e.g. control)
- Is the ICO backed to some level by regulators? (e.g. the OSC in Ontario can issue exemption letters, SEC in the US)
- What does the crypto-community say? (e.g. coverage in journals, podcasts, Youtube, Reddit, etc)



Putting it all together: a framework to assess white papers

Template on Google Drive

Criteria	Confidence Score (1-5) *	Comment
Team		
Project		
Technology		
Governance and Use of the proceeds		
ICO process		
Overall		
<i>* Score from 1 to 5 where 5 is the highest score</i>		



Thank you!

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