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Cryptographic tokens: The major regulatory challenges of a digitally-native bearer instrument of global reach

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- 29 October 2018, Luxembourg
- Presentation @ Chambre de Commerce Luxembourg :
11:00 - 12:00 - 30 minutes of presentation, 10 minutes Questions & Answers
- Jeff Braun, avocat @ Kaufhold & Réveillaud, Avocats

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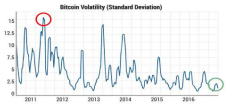
- Nota bene : Bitcoin, Blockchain and Distributed Ledger Technologies (DLT) = Dynamic and controversial subject, especially regarding future regulation. Regulators around the world are beginning to take positions on it in a way that is far from unanimous. The reader is therefore invited to consider the date of this document.
- Disclaimer : The content is educational, informative for lawyers or other professionals on technology known as Distributed Ledger Technologies (DLT) / Blockchain in order to better understand/grasp the related current, future regulatory challenges and impacts on different industries. The present content is thus not constitute legal advice, nor is it a recommendation to invest in cryptographic assets (e. g. Bitcoin). To date, the term e.g. "cryptographic asset" is not a legal term, but a technological or economic one.
- Risk of conflict(s) of interests: I personally hold certain cryptographic assets, mainly out of intellectual curiosity.



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Summary of the presentation:

- 1/ Bitcoin and Blockchain: Notions and concepts?
- 2/ Bitcoin in numbers?
- 3/ What does this mean for different people, actors and institutions?
- 4/ De facto, what is it?
- 5/ Finally, what is the legal impact of Bitcoin and its challenges in an AML/CTF context?

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- Technology : disruptive, maybe revolutionary
- Problems : new matter, strongly technologic, complex, dynamic
- Personal observation : Some unorchestrated misinformation: many press articles suffer from a substantial lack of research
- Terminology sometimes unfortunate because confusing / crypto jargon: *Virtual Currencies, Initial Coin Offerings (ICO), Smart Contracts, Fiat-currency* (legal tender)
- Recommended sources : www.coinmarketcap.com (global market data) ; www.coindesk.com (specialized press)
- Personal recommendation : Avoid understanding Blockchain and DLT technology while ignoring Bitcoin (BTC market dominance = +- 50% / MarketCap = $ 215 Billions for 2000 cryptoassets)

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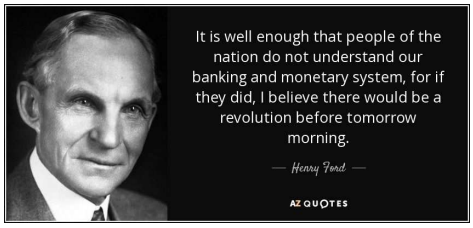

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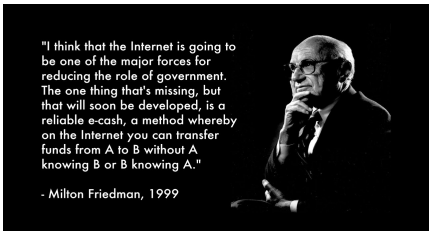

July 31, 1912 – November 16, 2006 - was an American economist who received the 1976 Nobel Memorial Prize in Economic Sciences

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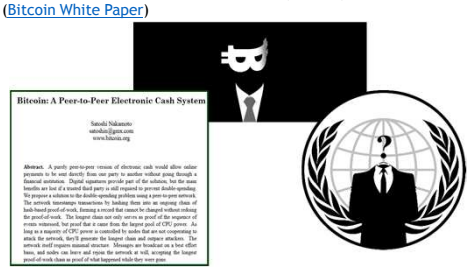
2008: Release of the Bitcoin Whitepaper by Satoshi Nakamoto:
Bitcoin = A Peer-to-Peer Electronic Cash System by
(Bitcoin White Paper)


Bitcoin: A Peer-to-Peer Electronic Cash System

Satoshi Nakamoto
satoshin@gmx.com
www.bitcoin.org

Abstract. A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. Digital signatures provide part of the solution, but the main benefits are lost if a trusted third party is still required to prevent double-spending. We propose a solution to the double-spending problem using a peer-to-peer network. The network timestamps transactions by hashing them into an ongoing chain of hash-based proof-of-work, forming a record that cannot be changed without redoing the proof-of-work. The longest chain not only serves as proof of the sequence of events witnessed, but proof that it came from the largest pool of CPU power. As long as a majority of CPU power is controlled by nodes that are not cooperating to attack the network, they'll generate the longest chain and outpace attackers. The network itself requires minimal structure. Messages are broadcast on a best effort basis, and nodes can leave and rejoin the network at will, accepting the longest proof-of-work chain as proof of what happened while they were gone.

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Definitions / Concepts / Functioning

Bitcoin = is a peer-to-peer (P2P), permissionless, encrypted, digitally-native and internet-based, censorship-resistant, transaction-network with distributed trust by design (no central authority / trust agent).

Bitcoin = a internet protocol and an open-source software

Bitcoin = distributed cryptocurrency / Cryptoasset

Bitcoin = an electronic P2P payment system with an inbuilt digitally-native cryptocurrency

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Definitions / Concepts / Functioning

bitcoins have properties of a money-like good/commodoty. They are portable, durable, divisible, recognizable, fungible, scarce and difficult to counterfeit.

New bitcoins are created/issued via decentralized distribution as a reward for a process known as mining. Mining consists in contributing hashpower (computing power) to the Bitcoin network.

Bitcoin is a deflationary "currency/asset": supply cap 21M, current supply approx. 18M) (also called "digital gold")

Bitcoin = internet phenomenon that gave rise to cryptofinance. Bitcoin is the first successful implementation of a decentralised cryptocurrency

NB: There is no Bitcoin computer, no Bitcoin company, no Bitcoin

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Definitions / Concepts / Functioning

- Precise technological innovation of Bitcoin : Satoshi Nakamoto solved the « digital double-spending-problem » leading to digital authenticity and rise of distributed-trust networks

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WTF is The Blockchain? (www.hackernoon.com, IN : 3500 words, 16 minutes of reading)

A **block chain** is a transaction database shared by all nodes participating in a system based on the Bitcoin protocol. A full copy of a currency's block chain contains every transaction ever executed in the currency. With this information, one can find out how much value belonged to each address at any point in history.

Every block contains a hash of the previous block. This has the effect of creating a chain of blocks from the genesis block to the current block. Each block is guaranteed to come after the previous block chronologically because the previous block's hash would otherwise not be known. Each block is also computationally impractical to modify once it has been in the chain for a while because every block after it would also have to be regenerated. These properties are what make bitcoins transactions irreversible. The block chain is the main innovation of Bitcoin.

https://en.bitcoin.it/wiki/Block_chain

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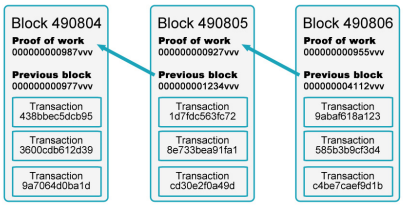

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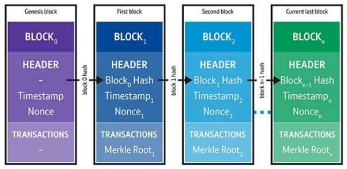

Cryptographic hash function :

Each transaction on the blockchain is subject to a cryptographic imprint, equivalent to a bar code. This confirmation grants an immutable and unalterable character of the transaction.

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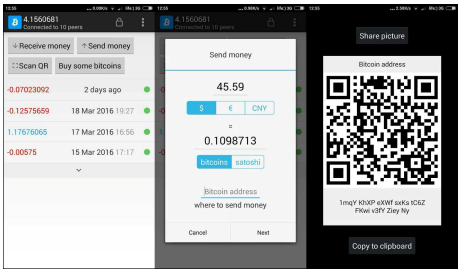
E-Wallet interface



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Bitcoin means many different things to different persons/actors/organisations

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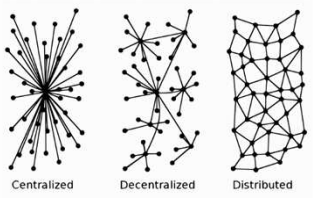
For IT/Computer Scientists : Bitcoin = a new internet protocol which is also a network
Emergence of a new internet infrastructure known as « Internet of Value »
(HTML web protocol = « Internet of Communications »)



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For Internet libertarians, of the so-called "cypherpunk" movement

Cypherpunks: *" Bitcoin = Initial « hack » of the central bank power system "*

Cypherpunks: *" In math we trust vs. ~~In God we trust~~ "*

Cypherpunks: *" Bitcoin is not a bubble, Bitcoin is the pin "*

Central Bankers: *"Give me control of a nation's money and I care not who makes its laws."*

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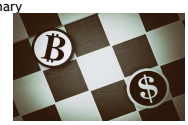
For central banks: Systemic competition through the birth of a digitally born currency, without state control, decentralised/anarchist, resistant to censorship and even deflationary



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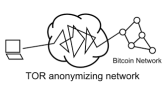
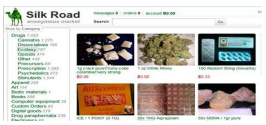
For criminal activities in the dark-net : **Censorship-resistance !**





NETFLIX YouTube [Documentary : Banking on Bitcoin]

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For industries in « Shadow banking » and/or « Offshore » : De facto rebirth of the "banking secrecy" » through a technological fact

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For states under international sanctions/embargo : means of circumventing financial sanctions impeding their international trade (e.g. North Korea, Iran, Venezuela).

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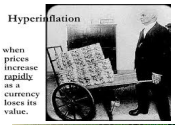
For economies suffering from hyperinflation: If there is an adoption of cryptographic currencies by the population = possible "fatal blow" to the legal tender moey-system and a situation in which it will be highly difficult to re-establish a stable legal tender (e.g. Venezuela et Zimbabwe).



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For entrepreneurs in technology : Finally a business model for so called « Open Source » projects & a new fundraising tool, called Initial Coin Offering (ICO), supposedly unregulated and resistant to censorship with a global reach.

ERC20

Initial Coin Offering (ICO) (rather: Public Token Sale) :
In reference to an IPO (intial public offering), an ICO is a DLT-driven fund-raise technique. A venture that needs to finance a project issues digital tokens for a kind of crowdfunding, like shares - which it sells to the public in exchange for bitcoin or ether.

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For investors : A new type of asset class (digital/cryptographic assets), which up to this day has no specific legal-framework on EU-level

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For several businesses/industries : Disruption

VS

ERC20 =

ripple VS

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Main reason for deep disruption:
a technology for des-intermediation through distributed-trust networks

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How to approach cryptocurrencies ?

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<u>What are we facing from a "technological facts" perspective?</u>

<u>Cryptocurrencies like Bitcoin:</u>

(i) a bearer instrument

(ii) Digitally-native = immaterial (digital yes, but virtual ?)

(iii) Supposedly censorship resistant

(iv) Depending on the internet, of global reach

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(i) Bearer Instrument (Peer to Peer (P2P) & Permissionless in case of Proof of Work protocol, e.g. Bitcoin)

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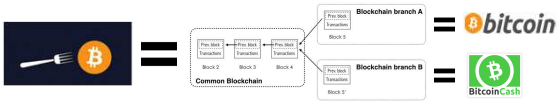
(ii) Digitally-native (pre-mined = coded / mined / hard forked)



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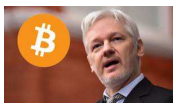
(iii) Supposedly censorship resistant

WikiLeaks



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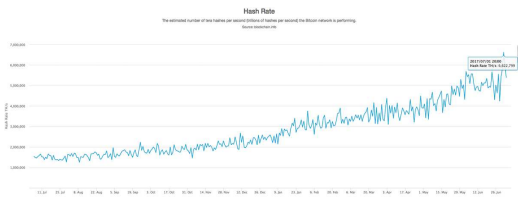

Bitcoin hashrate exceeded six exahash/s (6.000.000.000,-Gigahash/s) on 1st of July, 2017
In 2013, the bitcoin network was already 250 x more performant than the 500 most powerful supercomputers combined !

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Fundamental rights : Transaction of bitcoin = Freedom of speech, communication

Prohibiting P2P transactions of cryptocurrencies in most occidental democracies would be legally equivalent to prohibiting writing a letter or rather sending an encrypted message.

Example : theoretically possible to le n's private key by heart / possible to broadcast it over a screen screen

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Accounting: Accounting for crypto-assets (IFRS)

EY mentions a paper based on research in IFRS litterature released in 2016 by the Australian Accounting Standards Board (AASB) that found that a digital currency meets the definition of intangible assets, as defined in *IAS 38 Intangible Assets*, because a digital currency is an identifiable nonmonetary asset without physical substance.

Conclusion by EY: always a case by case

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Tax law / Accounting : in practice often treated as a commodity

Lux chart of accounts (temporary solution):
2358 Other securities held as fixed assets
5088 Other miscellaneous securities

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Capital markets law (stock exchange regulations) :
A new securitisation and/or distribution and/or fundraising tool

List of different regulators issuing alerts regarding ICOs, ww.IOSCO.org

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In scope of the EU AIF Directive as « **Other Assets** » = current provisory solution
AIF = **Alternative Investment Fund**

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Storage of cryptographic assets:

Cryptoassets custody multi-signature cold storage services: www.BitGo.com

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A range of challenges/risks in a AML / CTF context:

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How to approach cryptoassets in a AML/CTF context?

Bitcoin: A Peer-to-Peer Electronic Cash System

Mr. Jay Clayton (USA, SEC, Chairman), during the audience at the US senate on 6th of February 2018:

"[…] Market participants should treat payments and other transactions made in cryptocurrencies as if they were nothing more than a cash transfer from one party to the other. […] »

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Cryptocurrencies tracking technologies:
Risk-scoring for cryptofunds' origins in context of AML/CTF

SCORECHAIN
- www.scorechain.com (Luxembourg)

NEUTRINO
- www.Neutrino.nu (Italie, Milan)

CHAINALYSIS
- www.chainalysis.com
- www.coinfirm.io
- www.elliptic.io

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Cryptocurrencies known for their anonymity / non-tracability, so called « *Privacy Coins* »

MONERO

ZCASH

DASH
Digital Cash

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Future of the Compliance Manager = Data/Audit analysis of DLT data

www.blockchain.info
www.tokendata.io

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The best long-term and fully compliant "cryptoasset" currently available on the market?

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Luxembourg/CSSF: Licensed/supervised cryptoassets firms

Bitstamp — www.bitstamp.net is the oldest crypto trading platform in the world and the first approved crypto firm in the EEA. Payment institution license since 26.04.2016 and supervised by the CSSF.
(CSSF authorisation n° Z00000012)

bitFlyer — www.bitflyer.com/en is a Japan based crypto trading platform. EU Payment institution license and supervised by the CSSF. Currently licensed in Japan, EEA, 43/50 US states.
(CSSF authorisation n° Z00000016)

SNAPSWAP — www.snapswap.eu blockchain-driven payment services firm. EU e-money license.
(CSSF authorisation n° W00000007)

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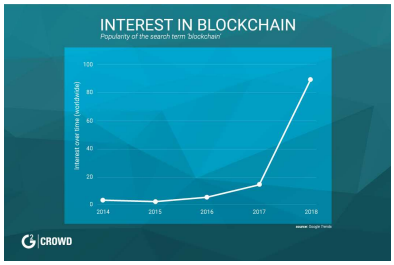
Knowledge!



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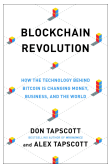

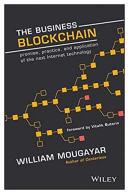

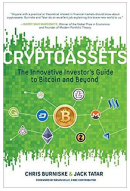

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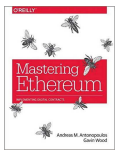
Andreas Antonopoulos

@aantonop

"Interview at London Real" - Andreas Antonopoulos



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