

The possible need for regulating  
The crypto ecosystem  
Kirsten van Driel - July 10, 2018

DeNederlandscheBank

EUROSYSTEEM

# Agenda

1. Introduction
2. The prototypes
3. Conclusions
4. Crypto's and Regulation

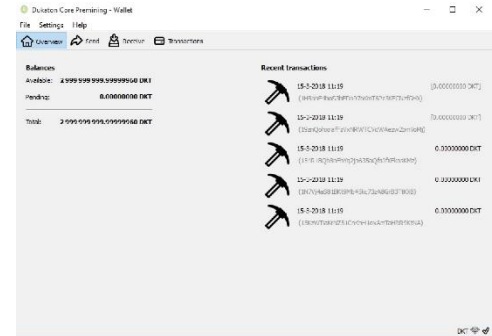
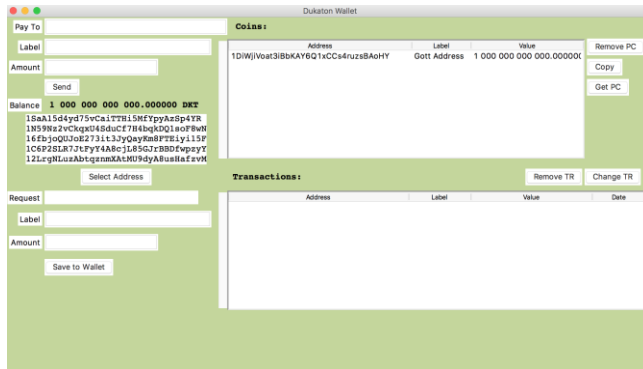
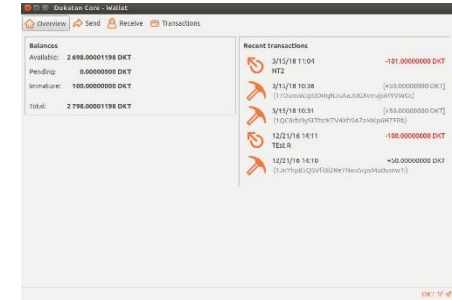


# Introduction: goals research

- To understand what Bitcoin and Blockchain are
- Can we use DLT to improve the payment infrastructure:
  - Capacity
  - Availability 100%
  - Cheaper
  - **Improved resiliency**
  - Final transactions
  - Sustainable

# Prototypes

1. Bitcoin clone
2. Bitcoin variance – premining
3. Wallet + Central database
4. Wallet + Distributed database based on different consensus models



# Conclusions

## DNBulletin: DNB experiments with blockchain technology

Datum 7 juni 2018  
Theme Economy



# Conclusions

- Bitcoin prototypes with PoW have disadvantages
  - Capacity
  - Finality
  - Sustainability
- Prototypes fail in fulfilling FMI requirements (capacity, efficiency, scalability, security, sustainability, and resilience)
- Requirements have trade offs
- Current consensus models work well in a trusted environment. Taking into account a malicious insider (untrusted environment) decreases capacity.

# Crypto's and Regulation

1. Definition of crypto's
2. International outings
3. Different local initiatives
4. AMLD5 European directive
5. Dutch work on regulation



# The root of Bitcoin

## 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.

### 1. Introduction

Commerce on the Internet has come to rely almost exclusively on financial institutions serving as trusted third parties to process electronic payments. While the system works well enough for most transactions, it still suffers from the inherent weaknesses of the trust based model. Completely non-reversible transactions are not really possible, since financial institutions cannot avoid mediating disputes. The cost of mediation increases transaction costs, limiting the



# Definition of crypto's

“virtual currencies” means a digital representation of value that is not issued or guaranteed by a central bank or a public authority, is not necessarily attached to a legally established currency and does not possess a legal status of currency or money, but is accepted by natural or legal persons as a means of exchange and which can be transferred, stored and traded electronically;



# International outings

## France, Germany call for joint G20 action on cryptocurrencies

Reuters Staff

2 MIN READ



BERLIN (Reuters) - The finance ministers and central bank governors of France and Germany called for the policy and monetary implications of crypto-currencies to be placed on the agenda of the upcoming G20 meeting of the largest advanced and developing economies.



# International outings

## ESAS WARN CONSUMERS OF RISKS IN BUYING VIRTUAL CURRENCIES

12 February 2018

JOINT COMMITTEE

MIFID - INVESTOR PROTECTION

The European Supervisory Authorities (ESAs) for securities (ESMA), banking (EBA), and insurance and pensions (EIOPA) have today issued a [pan-EU warning to consumers](#) regarding the risks of buying Virtual Currencies (VCs).

# local initiatives and warnings

## UK launches task force to scrutinize cryptocurrency risks and benefits

- The cryptocurrency task force is part of a wider financial technology strategy laid out by the U.K. government.
- Britain will sign an agreement with Australia that enables U.K. fintech firms to sell products and services in Australia.
- The fintech strategy also aims to create financial industry-wide standards which make it easier for fintech firms to partner with banks.

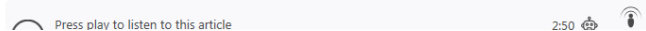
## FINMA publishes ICO guidelines

In guidelines published today, the Swiss Financial Market Supervisory Authority FINMA sets out how it intends to apply financial market legislation in handling enquiries from ICO organisers. The guidelines also define the information FINMA requires to deal with such enquiries and the principles upon which it will base its responses, creating clarity for market participants.

## Report: France to Have Bespoke ICO Regulations in Place by 2019



June 5, 2018 @ 9:46 am By JD Alois



# AMLD5

## *Article 1*

### **Amendments to Directive (EU) 2015/849**

Directive (EU) 2015/849 is amended as follows:

(1) point (3) of Article 2(1) is amended as follows:

(a) point (a) is replaced by the following:

‘(a) auditors, external accountants and tax advisors, and any other person that undertakes to provide, directly or by means of advice on tax matters as principal business or professional activity;’;

(b) point (d) is replaced by the following:

‘(d) estate agents including when acting as intermediaries in the letting of immovable property, but only in relation to transaction

(c) the following points are added:

‘(g) providers engaged in exchange services between virtual currencies and fiat currencies;

(h) custodian wallet providers;

(i) persons trading or acting as intermediaries in the trade of works of art, including when this is carried out by art galleries transactions amounts to EUR 10 000 or more;

# Dutch work on regulation

- 2014 warning
- The Innovationhub
- Rethinking our stance: the workgroup



# 2014 warning

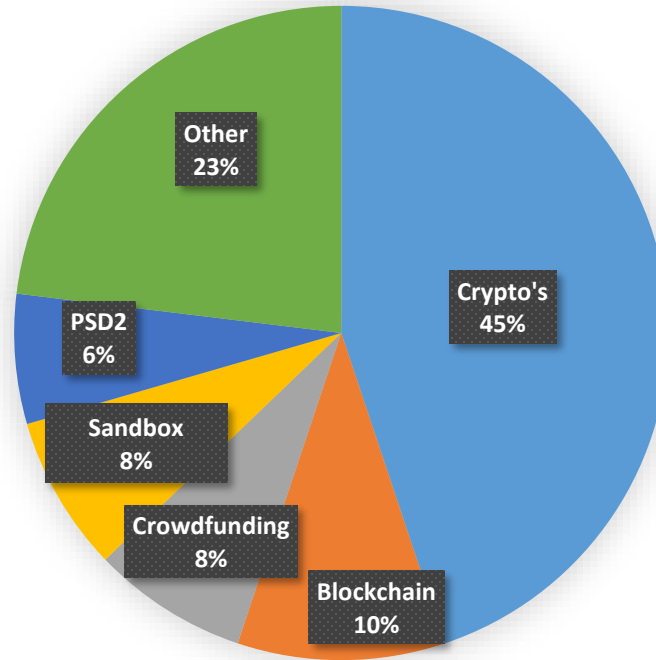
## DNB warns banks and payment institutions about integrity risks associated with virtual currencies

News

Date 3 June 2014

Transactions in bitcoins and similar virtual currencies, known as altcoins, involve a high degree of anonymity. Banks and payment institutions therefore need to be aware of the derived integrity risks they are exposed to because they are unaware, or not sufficiently aware, of the identity of the parties buying and selling virtual currencies. DNB qualifies existing virtual currencies (bitcoins and other altcoins) as products with an extremely high risk profile.

# Innovationhub questions





# The workgroup

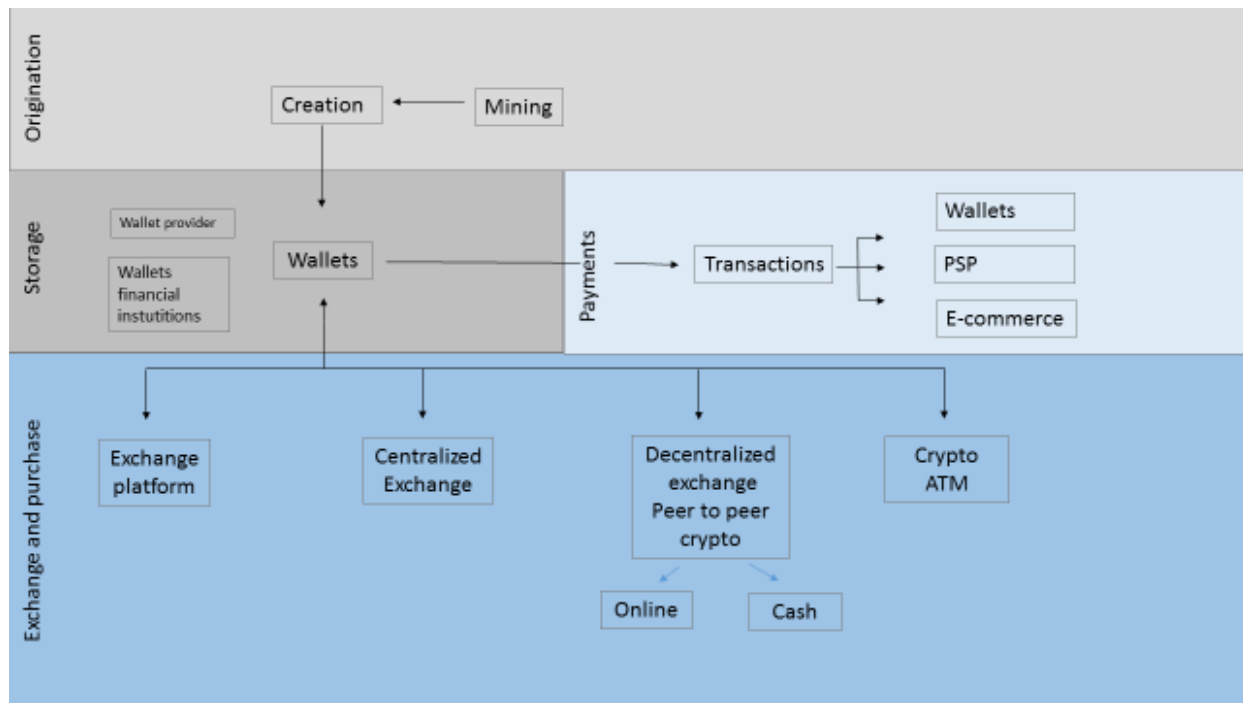
## Dutch Finance Minister Urges Multi-National Regulation Of Cryptocurrencies



Taking into account:

- Integrity
- Consumerprotection
- Innovation
- Proportionality

# Crypto ecosystem



Added:

- Information services
- Advising
- Functional use
- Insurance
- Lending

# Identifying and evaluating risks

Risks		
Risks for society	Risks for supervised institutions	Risks for consumers
Facilitating moneylaundering and financing of terrorism	Reputational risk	Illfunctional business model
Tax evasion	Prudential risk	Market abuse
Regulatory arbitrage	Unfair competition	Fraud and theft
Legitimation of crypto's		Limited or misguided supply of information
Energy consumption		Aggressive marketing
Sensitive for criminal abuse		Volatility of the value
Financial stability		
Trust in financial system		
Lack of accountability		



High

Middle

Low

# Work in progress

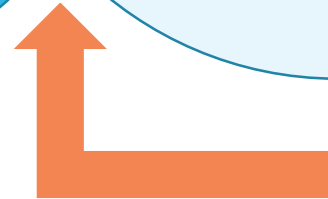
- Main risks in our assessment are financing financial and economic crimes, marketmanipulation and reputational;
- What do we think of crypto activities of banks under supervision:
  - In developing a cryptowallet
  - In using a public blockchain
- Do we treat startups with payment service-like activities like payment institutions?
  - What are our KYC requirements: Do we KYC the client or also the clients' client?
  - How do we set requirements to the traceability of the source of means?

# Regulated

# Crypto's/ICO's

Payment institutions  
Banks  
Pension funds  
Insurers

- Crypto's
- Exchanges
- Wallet providers
- ICO's
- Peer-2-peer



Legal/regulatory question

Thank you