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United Nations Centre for Trade Facilitation and Electronic Business
(UN/CEFACT)

White Paper on Blockchain and Trade Facilitation

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= One kind of Blockchain

Blockchain

= A Distributed Ledger Technology (DLT)

= The principal, most tested DLT

An example of another DLT is IOTA

Not all Blockchains and DLTs are equal, they vary in:

- **Vulnerability** (to hacking and other system failures)
- **Robustness** (including to flawed code)
- **Cost**
- **Speed and ability to scale up** (to large transaction volumes)
- **Degree of Privacy** (pseudo anonymity vs total anonymity)

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The most valuable Blockchain applications for trade are based on Smart Contracts

Smart Contracts are computer programmes that are stored on a blockchain (so they cannot be changed) and are automatically executed based on defined «events».

For example, if a sensor inside a container indicates that its temperature has exceeded a permitted level, a smart contract could send a request for an inspection or trigger an insurance payment.

The concept of Smart Contracts was invented in the 1990s by Nick Szabo; the proposal to programme a blockchain for implementing them was made by Vitalik Buterin in late 2013 and Ethereum went live in July 2015.

ethereum

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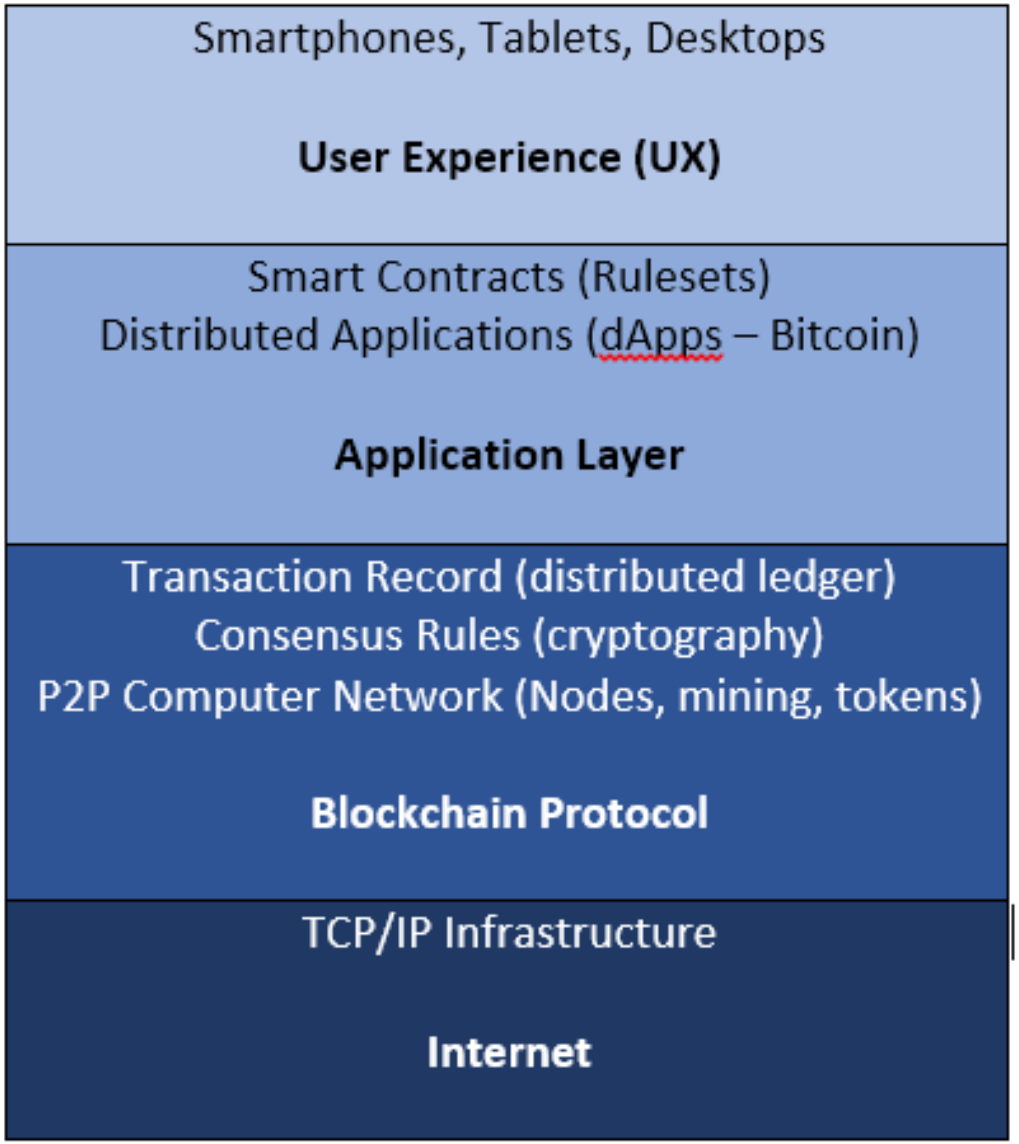
How do Smart Contracts fit into the overall blockchain context?



Most security flaws in blockchain systems occur in these top two layers and, especially, in UX

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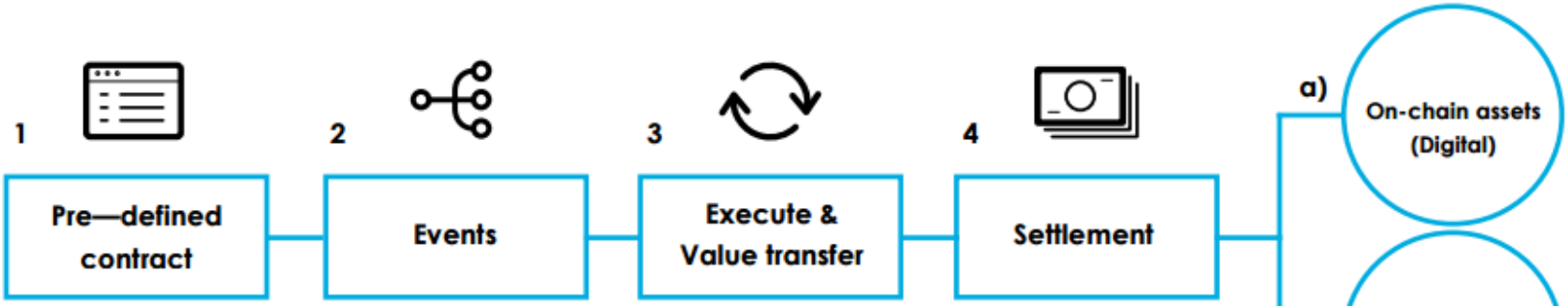
Smart Contracts are programmes on a blockchain that automatically execute based on defined «events»



- Terms are established by all counterparties, such as:
  - ◊ Variable interest rate (e.g LIBOR)
  - ◊ Currency of payments
  - ◊ Currency rate
- Conditions for execution (e.g time and date, LIBOR rate at given value)

- Event triggers contract execution
- Event can refer to:
  - ◊ Transaction initiated
  - ◊ Information received

- Terms of contract dictate movement of value based on conditions met.

a. For digital assets on the chain, such as a cryptocurrency, accounts are atomically settled

b. For assets represented off the chain, such as stocks and fiat, changes to accounts on the ledger will match off-chain settlement instructions

Source: sharetheledger.com

What Benefits for Trade?

Blockchain has the potential to deliver significant improvements to trade and eCommerce applications because:

- **Immutable and verifiable transactions** recorded in a blockchain can allow the elimination of paper in areas where today it is still required;
- **Automated (and immediate) reconciliation** algorithms can facilitate faster payments
- **The tracing of digital assets through 100s or 1000s of transactions** can support the tracking of sensitive goods and digital rights (for example IPR)
- **Immutable "original" electronic certificates, licenses and declarations can be linked with goods** in order to facilitate regulatory procedures.

Some Figures for Smart Ledger Technology benefits

- Estimated potential boost to World Trade: between $35 and $70 billion per year
- An estimated reduction in the cost of importing a single container of $45

From: *The Economic Impact of Smart Ledgers on World Trade*, The Centre for Economics and Business Research, the Cardano Foundation and the Z/Yen Group, April 2018

What impact on UN/CEFACT?

Being aware of the possible benefits for trade, the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) has asked itself:

- Are there any new technical specifications that UN/CEFACT should develop in order to maximise this the value of blockchain for its government and business constituencies?

- Are there recommendations that should be made to governments on how to best use and/or manage this new technology?

To Answer these Questions:
The UN/CEFACT Blockchain White Paper Project

Two white papers are being prepared

1) One on Standards, with the draft for consultation available at http://www.unece.org/fileadmin/DAM/cefact/cf_plenary/2018_plenary/ECE_TRADE_C_CEFACT_2018_INF.1.pdf

2) One on Blockchain and Trade Facilitation Processes with the draft well along, but still in preparation

This Workshop will present the first results

Blockchain Standards Gap Analyis White Paper

Draft now available for public comment

http://www.unece.org/fileadmin/DAM/cefact/cf_plenary/2018_plenary/ECE_TRADE_C_CEFACT_2018_INF.1.pdf

With an annex that explains how blockchain works

http://www.unece.org/fileadmin/DAM/cefact/cf_plenary/2018_plenary/ECE_TRADE_C_CEFACT_2018_9E.pdf

Outline for White Paper on Blockchain and Trade Facilitation

#	Chapter	#	Chapter
1	Introduction	9	Agriculture
2	What is Blockchain?	10	Energy Trade
3	Smart Contracts, Oracles, Tokens & Internet of Things (IoT) with blockchain	11	Financial Services (for trade finance, supply-chain finance, etc.)
4	When to consider using Blockchain – and when not to	12	Government Services
5	Blockchain Security, Legal and Regulatory Issues	13	Travel and Tourism
6	Supply Chain and Traceability	14	Music and Arts Markets
7	Maritime	16	Recommendations
8	Transportation (non-Maritime)		Annex of use/case-study descriptions

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Thank you

For more information contact

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