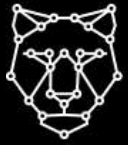


Use it or lose it

Johannes Brouwer
COO



LedgerLeopard

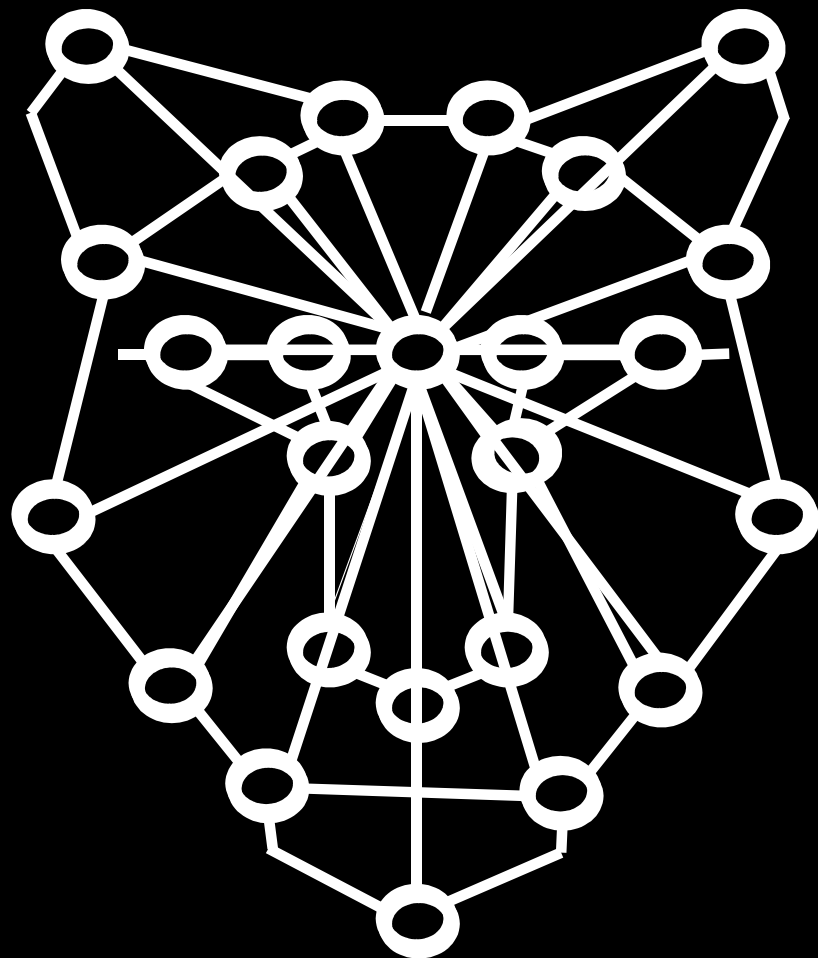


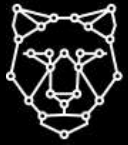
LedgerLeopard

Agenda

- Korte introductie
- Wat is nu eigenlijk Blockchain
 - Een paar voorbeelden
- Welke kansen biedt het voor u
- Eerste stap

**We decentralize
trust**

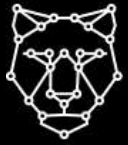




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Waar kent u ons van:

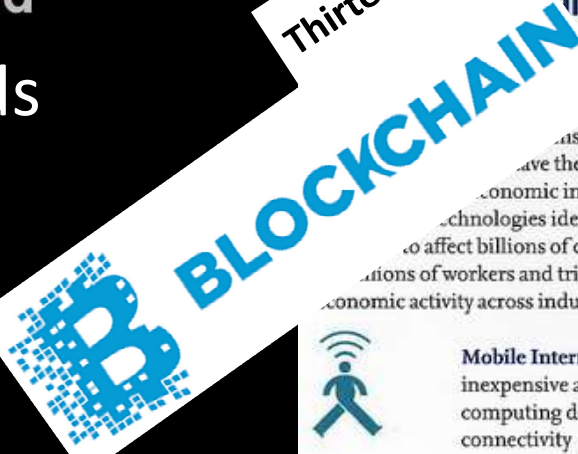
The screenshot shows a web browser window with the address bar displaying <https://nltimes.nl/2018/03/01/worlds-1st-babies-born-blockchain-birtherd-netherlands>. The page features a red navigation bar with the 'NLTIMES.NL' logo and a menu of categories: TOP STORIES, CRIME, POLITICS, BUSINESS, SPORTS, FOOD, HEALTH, WEIRD, TECHNOLOGY, and ENTERTAINMENT. The article is categorized under 'BUSINESS', 'HEALTH', and 'TECHNOLOGY'. The headline reads 'WORLD'S 1ST BABIES BORN ON BLOCKCHAIN BIRTHED IN NETHERLANDS', attributed to 'By Janene Pieters on March 1, 2018 - 12:10'. The main image is a close-up of a newborn's foot. On the right side of the article, there is a Belkin advertisement with the text 'Alle telefoonhouders gratis bezorgd.' and a Coolblue advertisement with a 'Meer informatie' link. The Windows taskbar at the bottom shows the time as 5:23 PM on 3/13/2018, with the language set to ENG.



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Trends

Thirteen



Thirteen potentially economically disruptive technologies

ing can make it
gies truly matter.
as attempted to
as in order to identify
ave the greatest potential to
conomic impact and disruption
chnologies identified below have
o affect billions of consumers, hundreds
ions of workers and trillions of dollars of
conomic activity across industries.



Mobile Internet Increasingly inexpensive and capable mobile computing devices and Internet connectivity



Automation of knowledge work Intelligent software systems that can perform knowledge work tasks involving unstructured commands and subtle judgments



The Internet of Things Networks of low-cost sensors and actuators for data collection, monitoring, decision-making and process optimization



Cloud technology Use of computer hardware and software resources delivered over a network or the Internet, often as a service



Advanced robotics Increasingly capable robots with enhanced senses, dexterity and intelligence used to automate tasks or augment humans



Autonomous and near-autonomous vehicles Vehicles that can navigate and operate with reduced or no human intervention



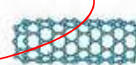
Next-generation genomics Fast, low-cost gene sequencing, advanced big data analytics, and synthetic biology ("writing" DNA)



Energy storage Devices or systems that store energy for later use, including batteries



3D printing Additive manufacturing techniques to create objects by printing layers of material based on digital models



Advanced materials Materials designed to have superior characteristics (e.g., strength, weight, conductivity) or functionality



Advanced oil and gas exploration and recovery Exploration and recovery techniques that make extraction of unconventional oil and gas economical



Renewable energy Generation of electricity from renewable sources with reduced harmful climate impact

Source: *Disruptive technologies: Advances that will transform life, business, and the global economy* – McKinsey Global Institute



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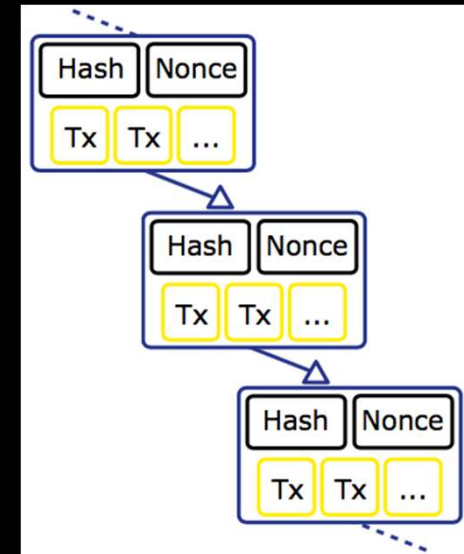
Wat is Blockchain?

*“ We should think about the blockchain as another class of thing like the Internet – a comprehensive information technology with tiered technical levels **and** multiple classes of applications for any form of asset registry, inventory, and exchange, including every area of finance, economics, and money; hard assets (physical property); and intangible assets (votes, ideas, reputation, intention, health data, information, etc.). In fact the blockchain concept is even more, it is a new organizing paradigm . ”*

– Melanie Swan, Founder, Institute for Blockchain Studies

Wat is Blockchain?

- Een keten van blokken
- Elk blok bevat:
 - Een of meer transacties
 - Een hash van het voorgaande blok
 - (optioneel) een nonce
- Een niet te manipuleren of te wijzigen datastructuur
- Gedistribueerd: Voor iedereen inzichtelijk

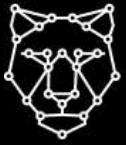


Wat is Blockchain (consensus modellen)?

- Proof of Work
- Proof of Stake
- Proof of Authority



- Public Blockchains
- Permissioned Blockchains / Consortium Chains



Wat is Blockchain (smart contracts)?

- Stukjes code die automatisch in gang gezet worden
- Worden gepubliceerd in de Blockchain
- Zijn moeilijk aan te passen en te verwijderen

```
1  pragma solidity ^0.4.8;
2  contract financingApplication{
3
4      enum states { open, goods_sent, goods_received,
5                  audit_request_sent, audit_request_received,
6                  finance_request_received, financing_approved}
7
8      address public seller, LSP, Auditor, FSP, buyer;
9      uint public contractState;
10
11     //modifiers to control invokation rights
12     modifier restrictedToSeller() { if (msg.sender == seller) _; }
13     modifier restrictedToLSP() { if (msg.sender == LSP) _; }
14     modifier restrictedToAuditor() { if (msg.sender == Auditor) _; }
15
16     //constructor
17     function financingApplication() { seller = msg.sender; }
18
19     //functions to change state of contract
20     function sendGoods restrictedToSeller(address _LSP){
21         LSP = _LSP;
22         contractState = states.goods_sent;
23     }
24
25     function receiveGoods restrictedToLSP () { contractState = states.goods_received; }
26
27     function sendAuditRequest restrictedToSeller(address _Auditor){
28         Auditor = _Auditor;
29         contractState = states.audit_request_sent;
30     }
31
32     function receiveAuditRequest restrictedToAuditor(){ contractState = states.audit_request_received; }
33
34 }
```

What's in it for you?

- Het is onveranderbaar
 - Fraude en cybercrime is nagenoeg onmogelijk
- Het is decentraal; elke stakeholder heeft dezelfde informatie op hetzelfde moment
 - Het vergroot het vertrouwen in de supply chain
- Je kan instructies/regels aan transacties koppelen
 - Compliance wordt afgedwongen
 - Het reduceert administratieve lasten (colored money)
- Je hebt geen centrale autoriteit meer nodig



LedgerLeopard

What's in it for you?

- Verhogen van transparantie, valideerbaarheid en voorspelbaarheid van uw productie- en onderhoudsproces, waardoor o.a. het vertrouwen in uw product toeneemt;
- Traceerbaar naar de bron
 - Voorkomen namaak
 - Inzicht in twijfelachtige omstandigheden
- (Cyber)veiligheid verhogen, doordat software updates alleen uit betrouwbare bron komen, geverifieerd middels blockchaintechnologie
- Controleerbare omgevingscondities



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Exact Synergy Enterprise

Urban Arrow

Secure | https://www.urbanarrow.com

Dealer Login

Nederlands

FAMILY | CARGO | VERKOOPPUNTEN | OVER ONS | CONTACT

Family

De Family is een bakfiets met elektrische trapondersteuning waarmee je je kinderen veilig en snel door de stad manoeuvreert. De fiets heeft een licht aluminium frame en is gemakkelijk wendbaar, zodat je soepel door het verkeer zigzagt. Vanaf nu kun je de auto

Shorty

De Shorty is een stoere woon-werk fiets. Het design is helemaal Dutch en dat zie je er aan af! Maar naast mooi, is de Shorty ook heel snel. Je kunt er, in tegenstelling tot een scooter, gemakkelijk een heleboel spullen mee vervoeren zonder aan wendbaarheid te

Cargo

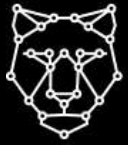
De Cargo is de ideale vervanger voor de bestelwagen. Maar dan beter. Want hij maakt van the last mile, the green last mile: razendsnel, efficiënt en bijna geluidloos. Daarbij stoot de Cargo geen fijnstof uit en is hij dus ook nog eens erg goed voor het

Windows taskbar icons: Start, Search, File Explorer, Chrome, Mail, Teams, Edge, PowerPoint.

System tray: Network, Volume, Notification Area Icons, Language (ENG), Date/Time (9:05 AM 9/22/2017).



Use cases: **Blockchain in practice**

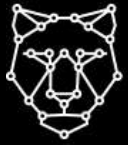


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Use case Healthcare

<https://youtu.be/JrntFi4ZrJ8>

https://www.youtube.com/watch?v=ZAKVD_YX9sw



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Tot Slot:

Bij de workshop Samen Smart Manufacturing toepassen

SMITZH is er een extra tafel:

Blockchain voor de maakindustrie

Einde.