

*kadaster*



# BLOCKCHAIN

Distributed Ledger Technology

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*“Blockchain Tech Will Make Banks Disappear in 10 Years”, Says VP of Russia’s Biggest Bank*



*“You should be taking this technology as seriously as you should have been taking the development of the Internet in the early 1990s,” [Blythe Masters] told a recent audience. “It’s analogous to email for money.”*



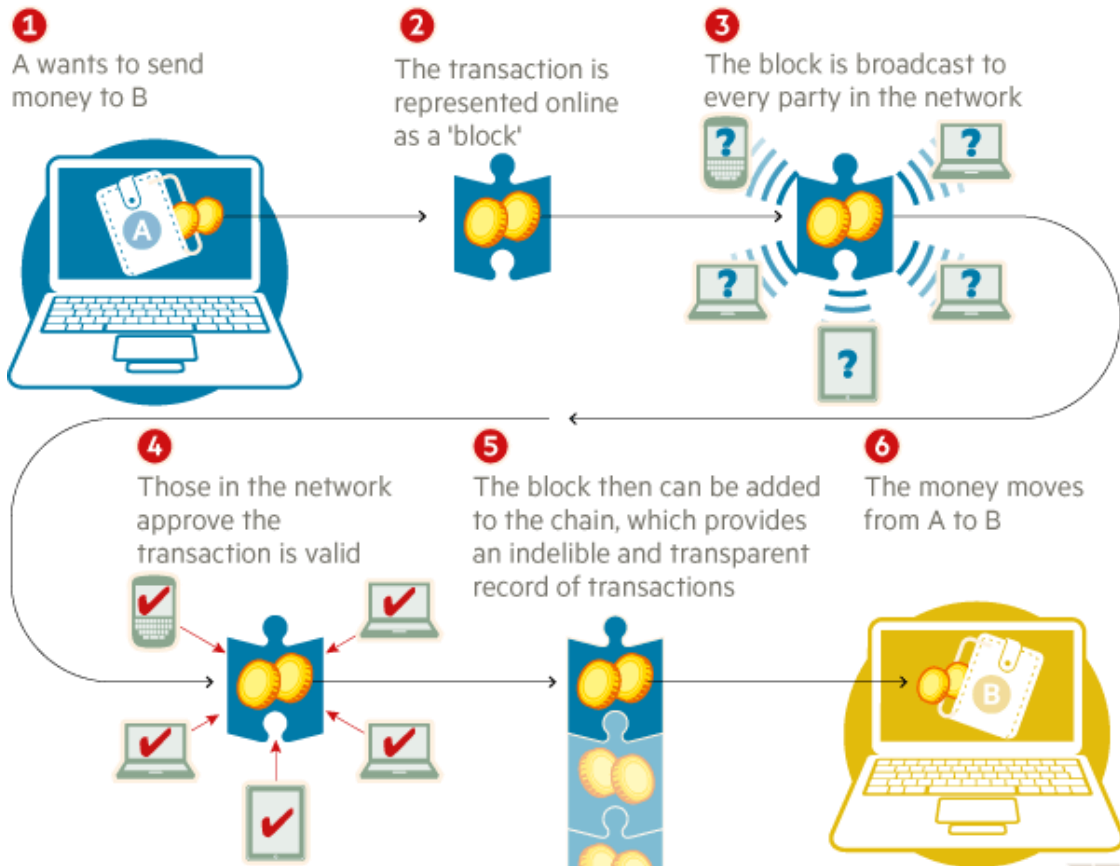
*“Land Registry and Commercial Registers  
– they will become obsolete.” (Emerce)*



# INTRODUCTION BLOCKCHAIN

[illegible]

## How a blockchain works



FT

# BLOCKCHAIN WILL BRING ...

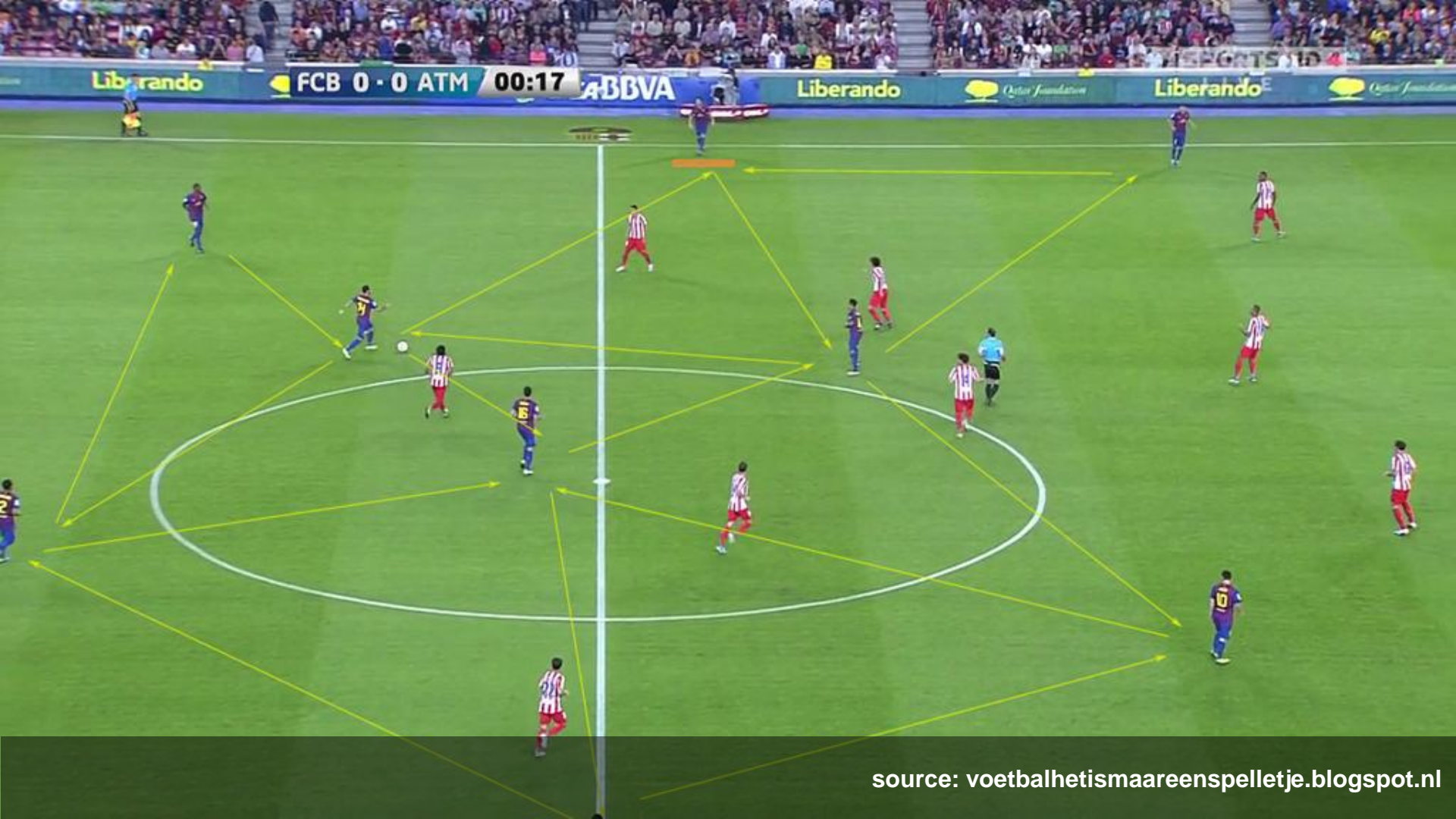
- INFORMATION SYMMETRY
- IMMUTABILITY
- TRANSPARENCY











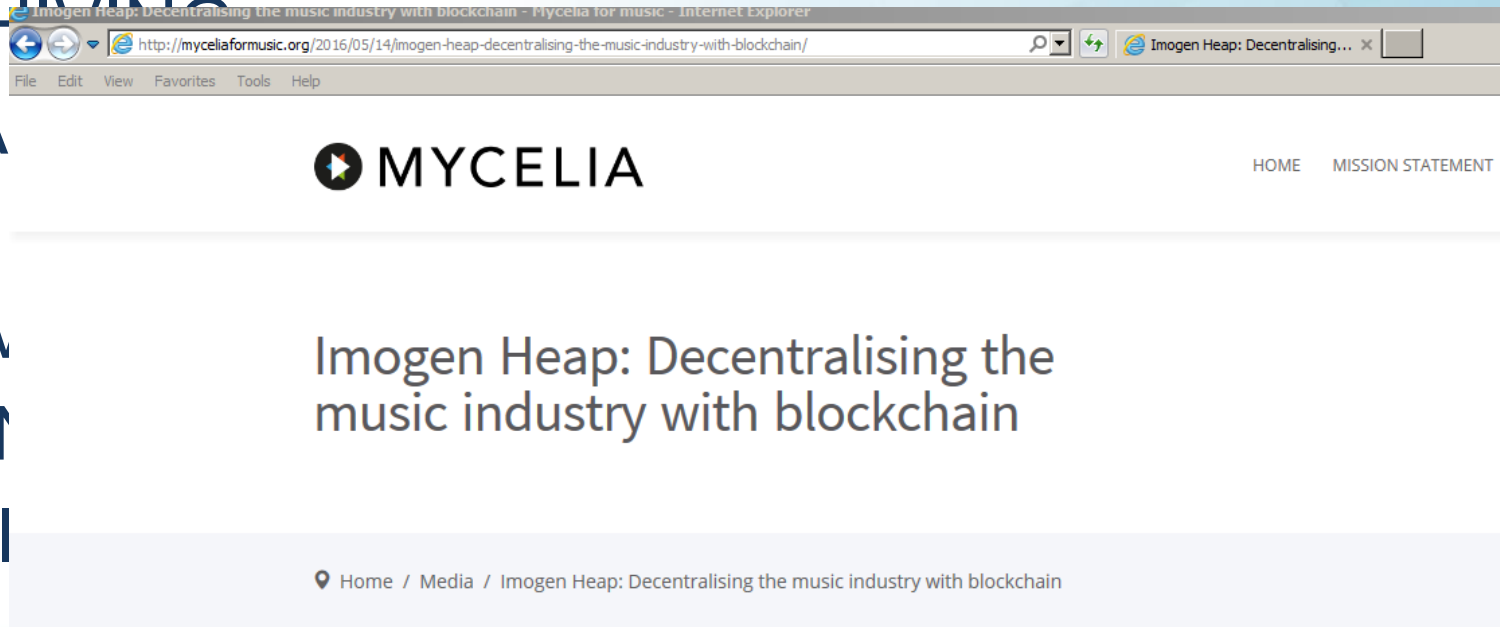
source: [voetbalhetismaareenspelletje.blogspot.nl](http://voetbalhetismaareenspelletje.blogspot.nl)





# POSSIBLE APPLICATIONS...

- TRACKING & TRACING (AUDITTRAIL)
- ARCHIVING
- DATA OR
- EARN
- FINANCE
- MONITORING





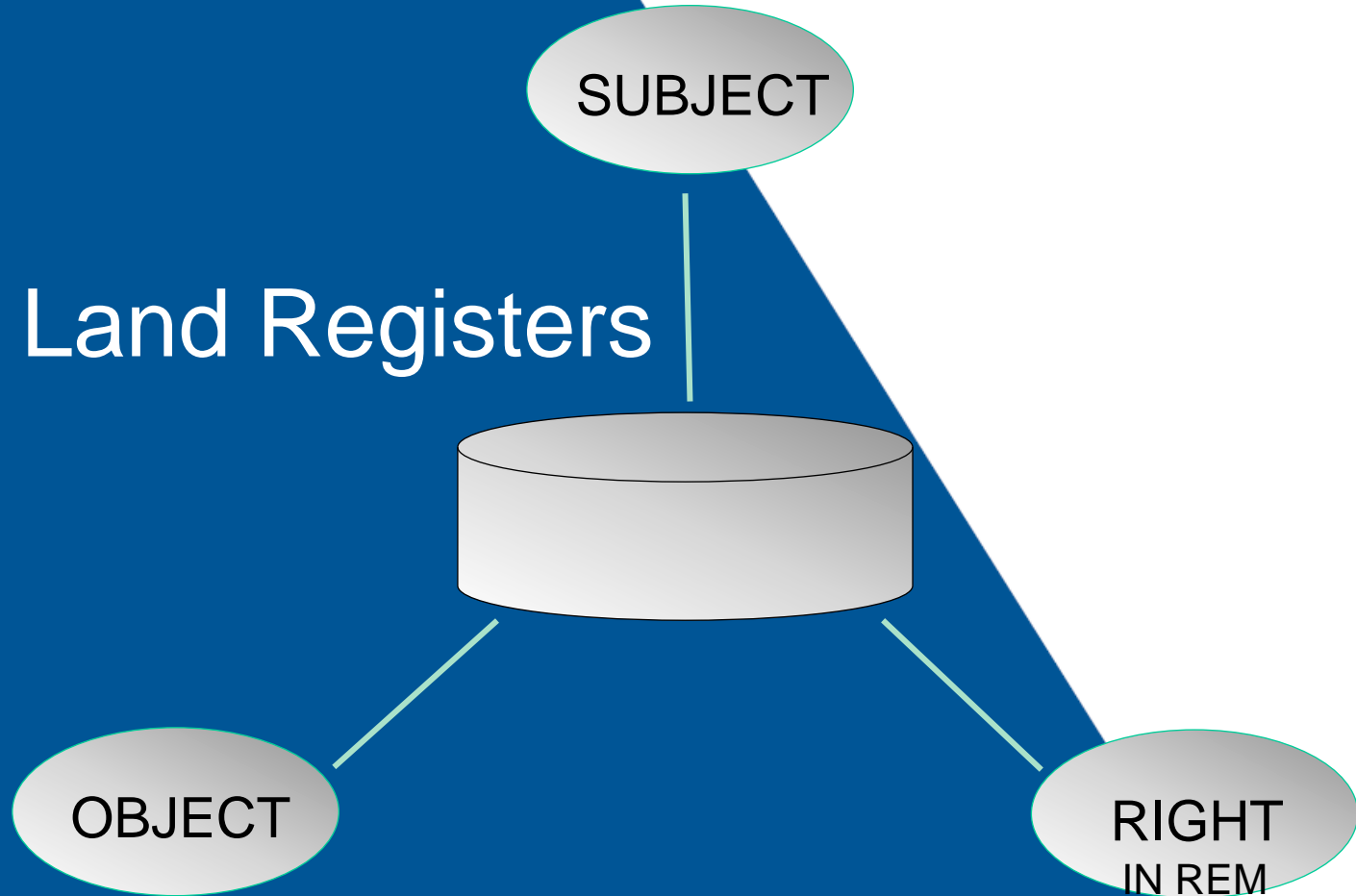
*Through 2018, 85% of blockchain-named projects will deliver business value without using a blockchain.*

*(source: Gartner)*



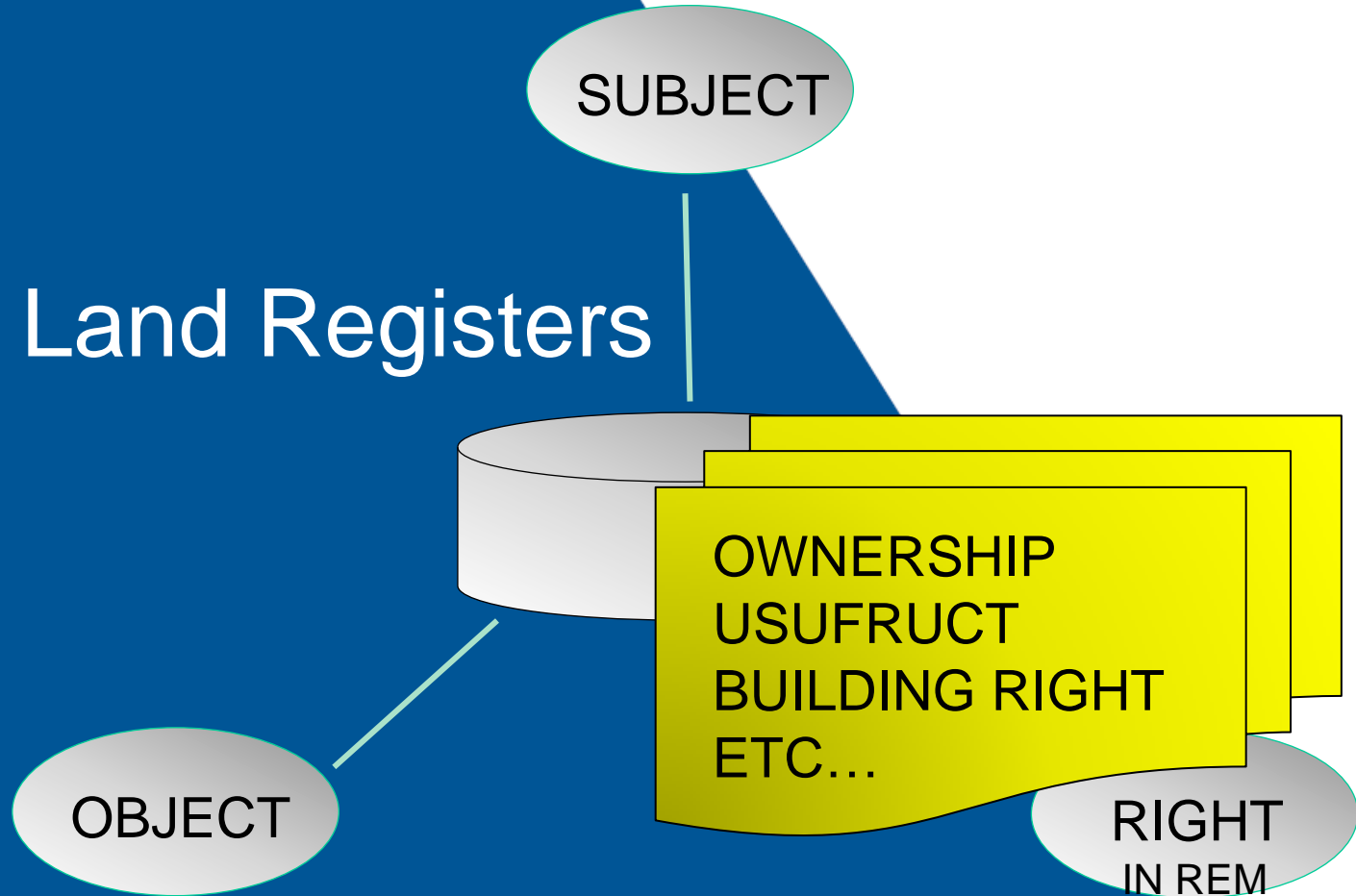
# BLOCKCHAIN & LAND REGISTRY

# Land Registers





# Land Registers



Land

SUBJECT

NATURAL  
LEGAL PERSON  
LIMITATIONS  
ETC...

OBJECT

OWNERSHIP  
USUFRUCT  
BUILDING RIGHT  
ETC...

RIGHT  
IN REM

Land

SUBJECT

NATURAL  
LEGAL PERSON  
LIMITATIONS  
ETC...

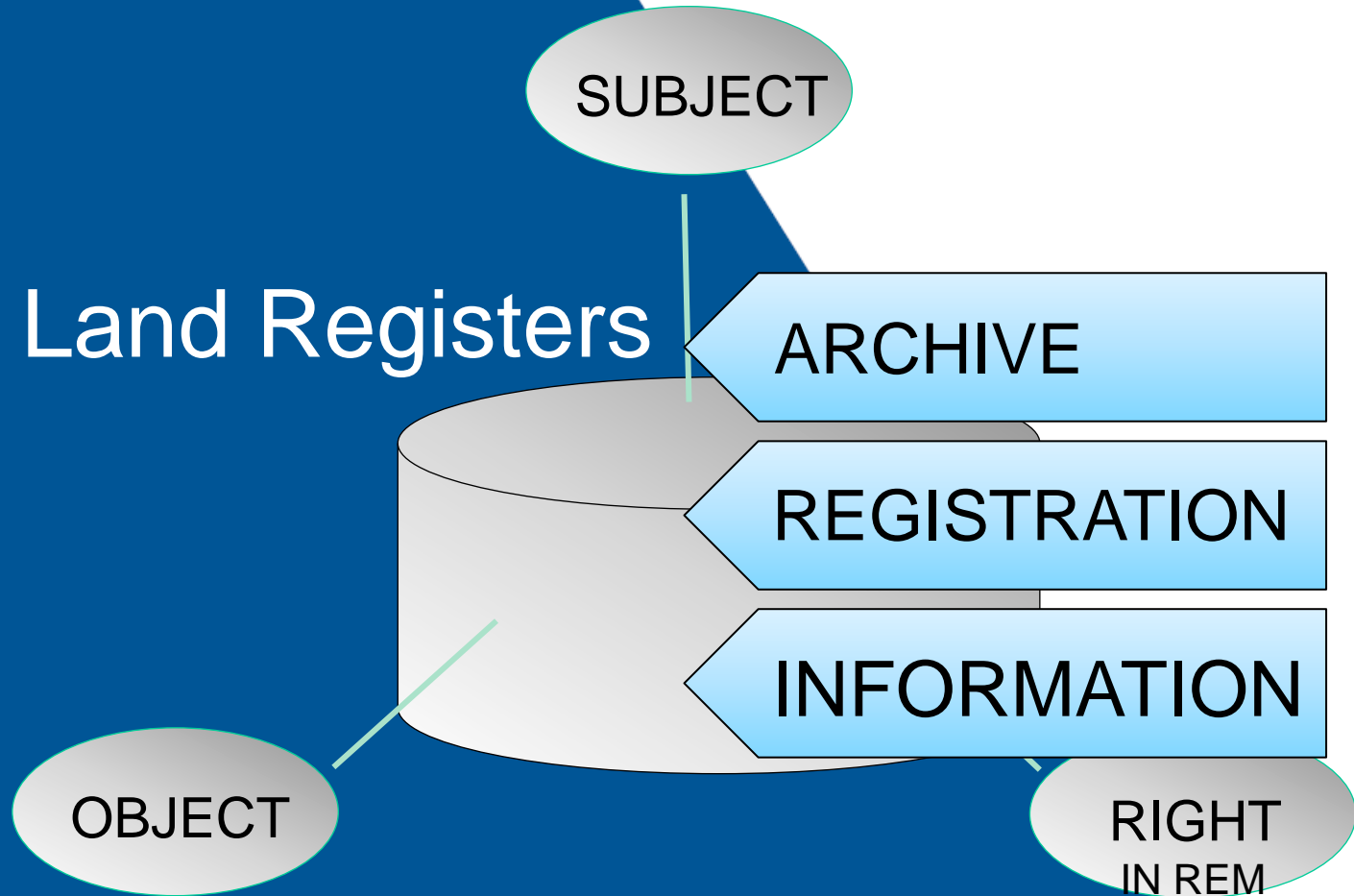
HOUSES  
APARTMENT/  
CONDOMINIUM  
CABLES & PIPELINES  
ETC...

OWNERSHIP  
USUFRUCT  
BUILDING RIGHT  
ETC...

OBJECT

RIGHT  
IN REM

# Land Registers





# Blockchain (1)

ARCHIVE

Yes, hash/pointer

REGISTRATION

No, too complex

INFORMATION

No, data retrieval



## Blockchain (2)

Genesis-block

Who? Quality- issue

Governance?

DAO, indemnity

Smart contracts

**Code = law = code**

# CONTRACT





## Blockchain (3)

Vendor lock-in?

Who owns data

Bitcoin-based?

PoS & no PoW

Complete?

No, data retrieval





# 3 Concepts

TRUST

Decentral & transparant

DESIGN

Network & consensus

TECHNOLOGY

Multiple techniques



# Trust as a fairytale?

SECURE DATA

C.I.A.? D.I.Y.?

IMMATURE

PoW? PoS? DAO?

OPEN & TRANSPARANT

Transparant: yes,  
open?



# In Future?

VARIOUS INITIATIVES

Redundancy & privatization!

STANDARDIZATION

ISO/TC307, BIM, etc.

SMART CONTRACTS

Not all legal aspects

# TRUSTED THIRD PARTIES...

- VALIDATE TRANSACTIONS
- GUIDE A CERTAIN PROCES
- DRAFT CONTRACTS
- IDENTIFY OBJECTS & SUBJECTS
- ARE AN INDEPENDANT WITNESS
- PREVENT FRAUD



# INTERNATIONAL



FACTOM™

DEVELOPERS

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## FACTOM HARMONY

Factom Harmony solves for many of the business problems facing the Mortgage industry today. Use the transparency and permanence of Factom blockchain technology to substantially reduce compliance, litigation and documentation expenses.

[WATCH VIDEO](#)

## Factom Harmony Suite



### Digital Vault

Post-closing and quality control



### Audit Room

Manage documents for loan reviews

**Ghanaian Land Title Registry Problems Solved !  
Don't Waste Time in Court ! (or worse)  
Secure Your Property Rights HERE TODAY!**

Official Ghana non-profit NGO Offering Services for FREE or at Cost-Price



## Real Estate Land Title Registration in Ghana

### Bitland Real Estate Land Title Registration

Do you Require a **Cadastral deed of property** (proof of ownership) or perhaps simply **genuine**

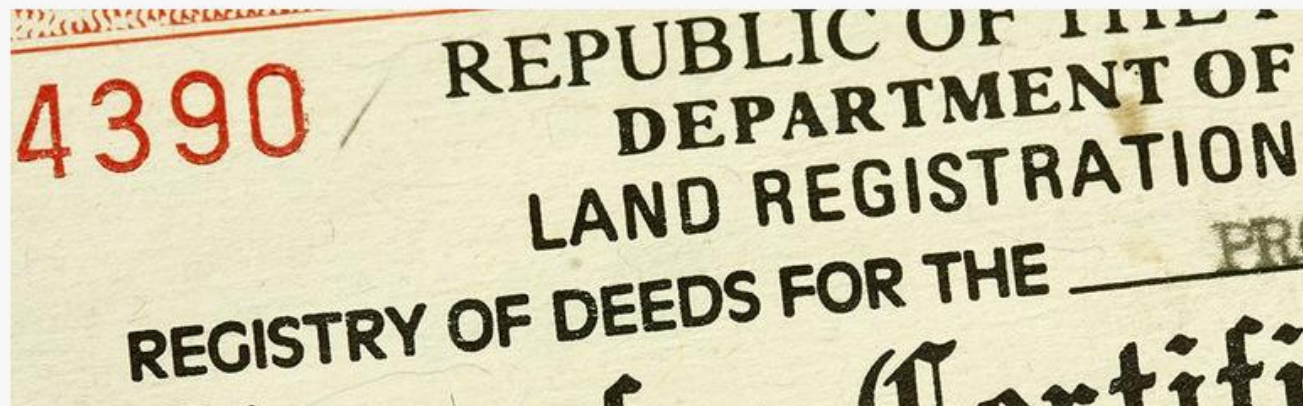
/ BLOCKCHAIN

by Kyle Torpey

Oct 6, 2016 11:47 AM EST

 Tweet

# Chicago's Cook County to Test Bitcoin Blockchain-Based Property Title Transfer





[/ BLOCKCHAIN](#)by **Giulio Prisco**

Feb 8, 2017 3:51 PM EST



Tweet

# Bitfury, Republic of Georgia Push Ahead With Blockchain Land-Titling Project



In April 2016, the Republic of Georgia's National Agency of Public Registry (NAPR), renowned Peruvian economist Hernando De Soto, and Bitfury

# Ukrainian Government Partners with The Bitfury Group to Create First Full-Scale Blockchain eGovernance Program for Ukraine

**The State Agency for eGovernance's Blockchain Innovation Program aims to bring to the Ukrainian people cost reduction, improved government efficiency & increased transparency to help reduce corruption**

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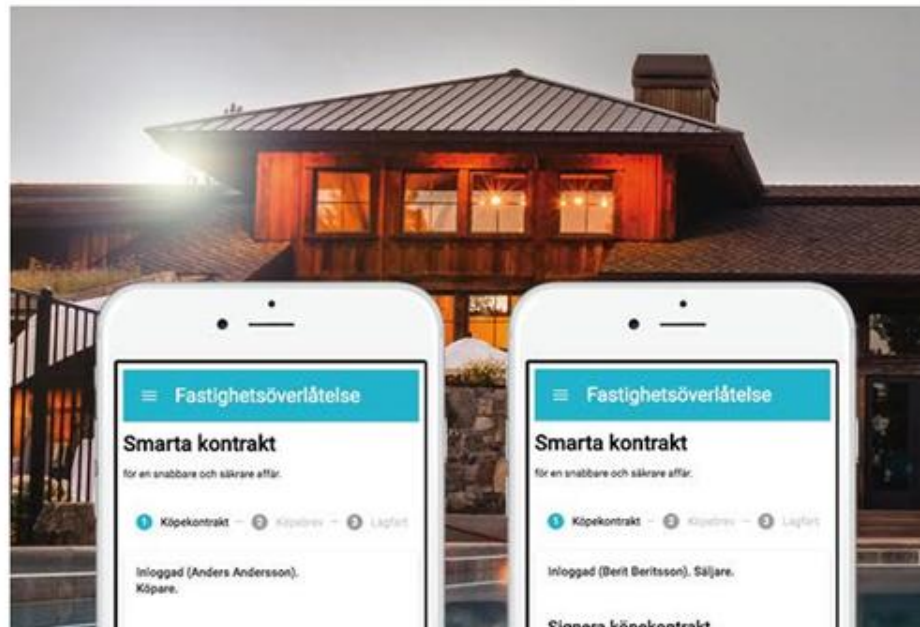
KYIV, UKRAINE – April 13, 2017 – The [State Agency for eGovernance of Ukraine](#) signed today a groundbreaking first-ever Memorandum of interaction and cooperation (Memorandum) with The Bitfury Group, the world's

## FUTURE HOUSE SALES

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The Swedish Land Registry, ChromaWay, Kairos Future and Telia Company investigate Smart Contracts and Blockchain for the process of selling a house.

[TRY THE DEMO](#)





# NATIONAL

# BLOCKCHAINPROJECTS

## DUTCH GOVERNMENT

### MINISTRY OF INTERIOR AFFAIRS

Conducted research into the potential powerful combination of digital identity and Blockchain.

### MINISTRY OF JUSTICE

Did research to the possibilities to use Blockchain for the execution of the judicial decisions of juvenile courts.

### COURT OF AUDIT

Investigated whether the role as controller of 240 billion Euros of yearly expenditures by the central government would change as the result of blockchain based administrations.

### HUMAN ENVIRONMENT AND TRANSPORT INSPECTORATE

Rethought the administrative and logistical process of transporting toxic waste from the Netherlands to another EU State.

### HUMAN ENVIRONMENT AND TRANSPORT INSPECTORATE

Developed a blockchain based system for the tracking of working and resting hours of truck drivers.

### MINISTRY OF FINANCE

Built a prototype on Ethereum in collaboration with ING to improve the process of financing the development of new school buildings. This administrative and financial process involves multiple governmental organizations.

### CITY OF THE HAGUE

Developed a significantly improved (and highly automatized) regulation for subsidies on electric vehicles.

### CAK

Created a blockchain process to make the financial and administrative process for subsidised public healthcare services more efficient.

### CIBG

Did research into the ways to use blockchain as (part of) a register for medical instruments.

### THE INSPECTORATE OF THE MINISTRY OF EMPLOYMENT

Created a use case for the improvement of data sharing with several other governmental organizations in order to improve detection of fraud, exploitation and organised crime within the chain of work and income.

### MINISTRY OF FOREIGN AFFAIRS

Developed a use case for the improvement of financial arrangements that involved multiple stakeholders.

### CHAMBER OF COMMERCE

Developed the business case for a blockchain service to make it possible to quickly establish a temporary foundation.

### CITY OF AMSTERDAM

Looked into more simple and efficient ways to apply for a personal healthcare budget than the current complex financial and administrative process.

### STICHTSE VECHT

Streamlined the process of requesting specific healthcare service (for example: wheel chair, stair lift) that requires data sharing with several other governmental organizations and healthcare organisations.

### ROTTERDAM

Developed a blockchain process to collect tourist tax more efficiently.

### CITY OF SCHIEDAM

Developed a blockchain system to streamline the internal financial administration.

### CITY OF SCHIEDAM

Created a use case for a blockchain based system to improve the process debt counseling.

### CITY OF SCHIEDAM

Improved the process of assigning and controlling parking spaces for disabled citizens.

### CITY OF ZAAANSTAD

Established a procedure for a DIY marriage and divorce on the blockchain.

### HEALTHCARE INSTITUTE

Built a prototype on Ethereum to create a clear overview of authorisations in the healthcare process.

### LEGAL AID BOARD

Developed a use case for a faster, more secure automated process for the attribution of legal support.

### DRECHTSTEDEN

Created a use case for blockchain to streamline the process of the assignment of parking licenses for disabled citizens.

### BAR ORGANISATION

Rethought the permit system for organizers of larger events (concerts for example) which requires the police, the municipality, the fire department and other organizations to get access to the same info realtime.

### CITY OF EINDHOVEN

Developed a blockchain use case for speeding up the process of the land parcel transfers.

### CITY OF ZUIDHORN

Developed a prototype of a blockchain based service to make it easier to get subsidies from different aid organizations.

### JUSTID (JUDICIAL INFORMATION SERVICES)

Worked out a proof of concept for a log of what information was shared with whom at what time during a criminal trial proceedings.

### CADASTRE, LAND REGISTRY AND MAPPING AGENCY

Developed a use case for Blockchain based registration of ships with the Delft University of Technology.

### TAX AND CUSTOMS ADMINISTRATION

Created a use case that makes it possible to redistribute (income) tax money as soon as it gets deducted from an employee's income.

### CITY OF UTRECHT

Created a use case for the improvement of data sharing within the waste sector.

### PROVINCE OF NOORD-BRABANT

Developed a use case that showed that it would be possible to reduce the time to get through the administrative and financial processes for subsidies from 13 weeks to 13 minutes.





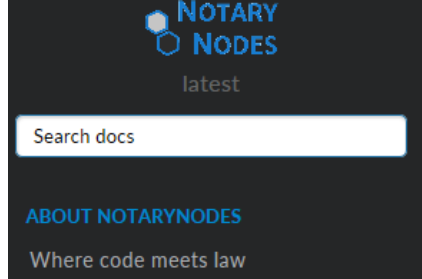
[Support](#)[Hoe werkt het?](#)[Veelgestelde vragen](#)[Over Blandlord](#)

## Hoe werkt het?

Blandlord is een nieuwe vorm van dienstverlening waarbij je deel-eigenaar kunt zijn van verhuurd onroerend goed.

Door het gedeeld eigendom, de huizen, te verhuren worden inkomsten gegenereerd voor de eigenaren. Deze inkomsten worden maandelijks, naar rato van het bezit, verdeeld over alle eigenaren. Alle eigenaren hebben inzicht en inspraak in de beheerafspraken van hun eigendom.

# Bloqhouse & Notary Nodes



NotaryNodes V0.1

Hyperledger fabric  
(Enterprise) Ethereum

Joining NotaryNodes

**LEGAL**

Overview

Notary workshops

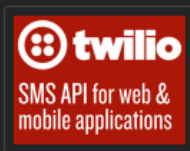
**BLOQS (AN EXAMPLE ASSET)**

What is a Bloq?

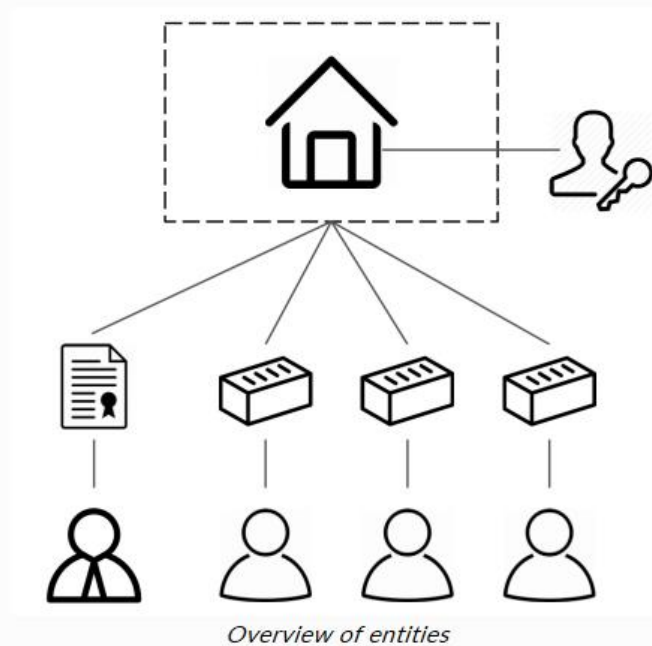
Getting Started

Hackathon

(Decentralized) APPs



Make and receive SMS messages in your applications with just a few lines of code.

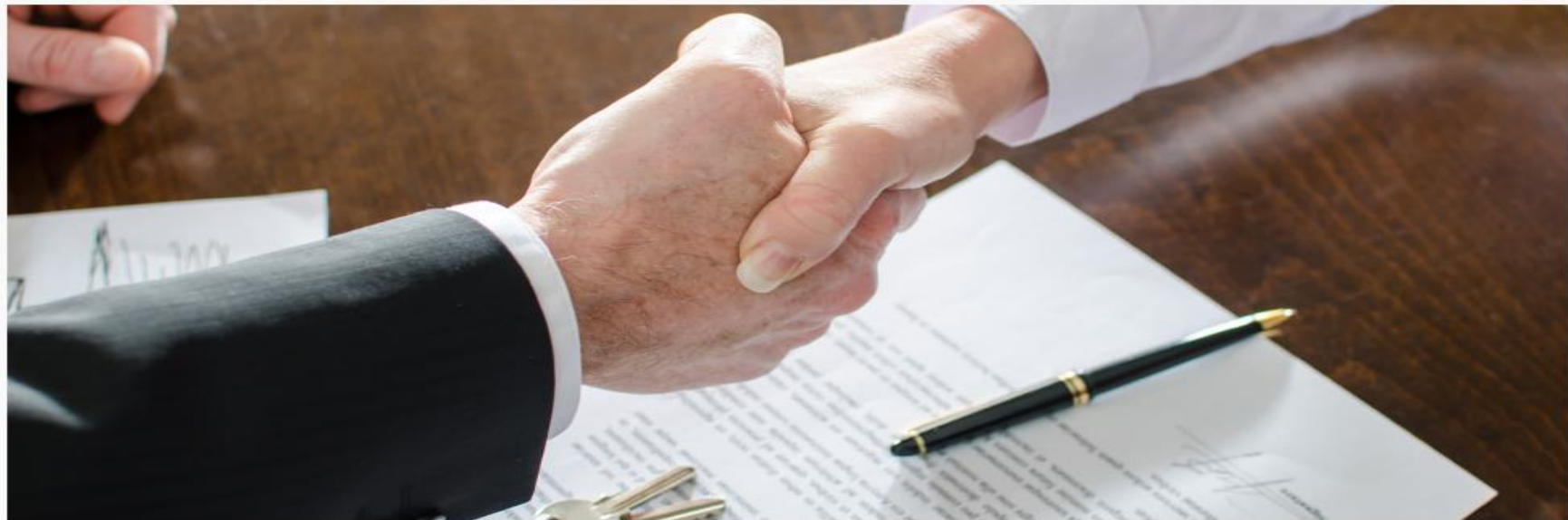


	Property		Fund manager
	Legal entity / fund		Crowd
	Legal ownership		Tenant
	Bloq		

## Blockchain experiment commercieel vastgoed sector

Persbericht - 15 december 2016

Innovatie



**ABN AMRO is een pilot gestart om te onderzoeken hoe partijen die betrokken zijn bij vastgoedtransacties informatie kunnen vastleggen en uitwisselen op de blockchaintoepassing 'Torch'.**

Bij vastgoedtransacties zijn veel partijen betrokken. Denk aan kopers, verkopers, huurders, verhuurders, taxateurs, notarissen, banken, het Kadaster, de KvK en toezichthouders. Torch is een blockchaintoepassing waarin betrokkenen op een betrouwbare en efficiënte wijze informatie kunnen vastleggen, inzien en uitwisselen. Met ieder zijn eigen rol.





# KADASTER

# DUTCH KADASTER DID ...

- JOIN THE NATIONAL BC-PILOTS (SHIPS!)
- CONTINUE THIS FEASIBILITY STUDY
- DISCUSS 'GREENFIELD' WITH DUTCH NOTARIES
- EXCHANGE VIEWS & KNOWLEDGE
- PILOT A BLOCKCHAIN WITH OPEN DATA

INSTEAD OF RISKING ANYTHING NEW,  
LET'S PLAY IT SAFE BY CONTINUING OUR  
SLOW DECLINE INTO OBSOLESCENCE.





# ‘INVENTIVE SOLUTION-THINKERS’



THANK YOU

Jacques Vos