



How to learn what Smart Contracts are?

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DDSZ Kick off





*BLOCKCHAIN IS A YOUNG
POWERFUL TECHNOLOGY
FULL OF POTENTIAL*



*WHY HAS IT NOT REACHED
ITS FULL POTENTIAL YET?*





31%
*LACK IN-HOUSE
CAPABILITIES
(SKILLS AND
UNDERSTANDING)*

Source: Deloitte's 2020 GlobalBlockchain Survey



*HOW TO LEARN ABOUT
SMART CONTRACTS
IN A SAFE ENVIRONMENT?*

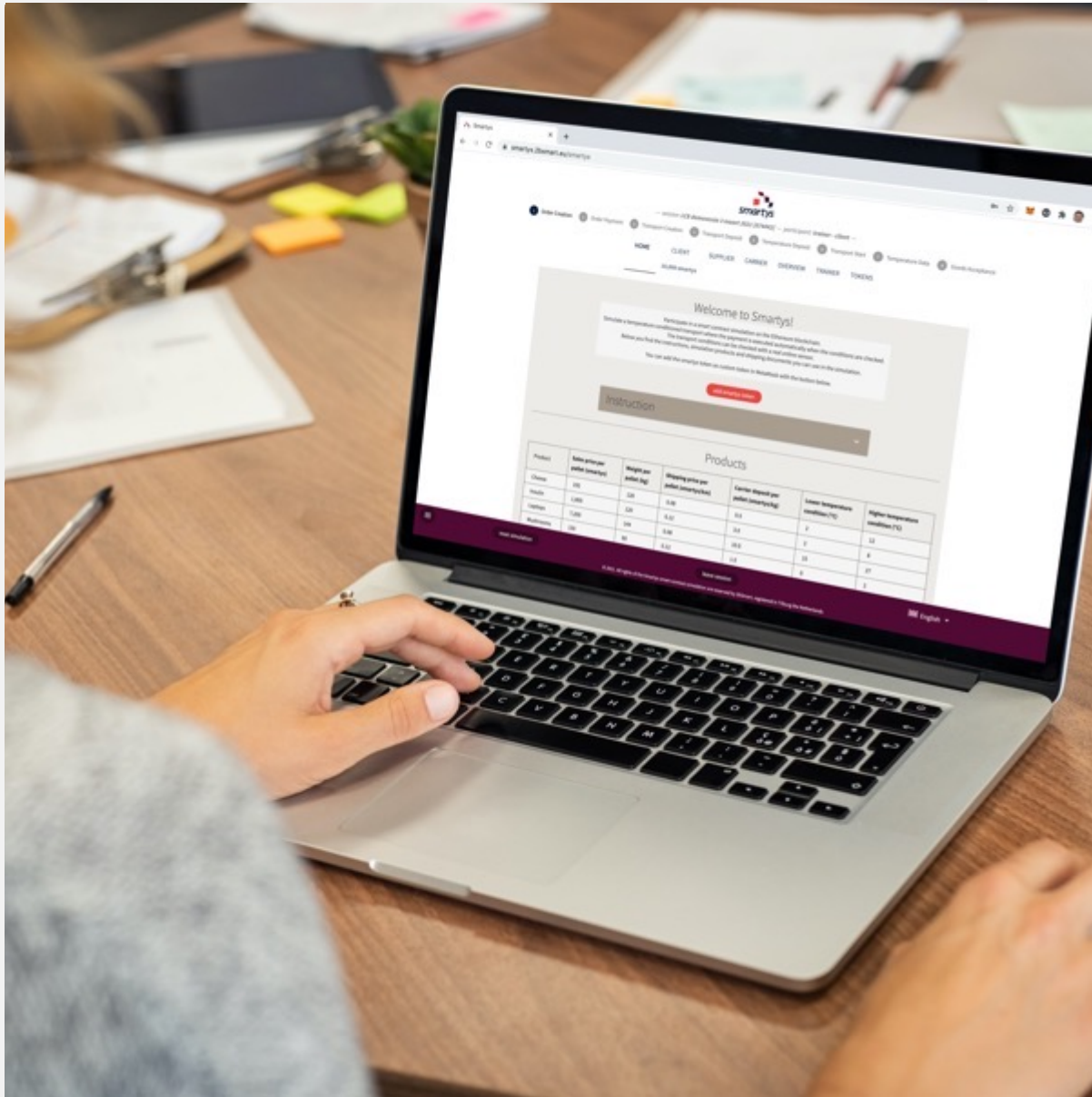


*INTERACTIVE SIMULATION
IS THE ANSWER*



0	6	7	2	6	9	0	3	8
0	4	9	4	8	2	9	7	1
0	6	7	8	7	4	0	6	7
0	4	8	5	7	0	6	7	
0	4	8	5	6	0	2	7	





What is SmartyS?



Blockchain & IOT simulation platform



Smart contract use case in logistics



Workshop for students and business

```
Secret s = getSecret(m_signKey);
if (m_inputs.empty())
    m_inputs.push_back(string());
for (string const& i: m_inputs)
{
    bool isFile = false;
    try
```

Smart contract

"A smart contract is a programmed contract with agreements recorded in computer code on the blockchain."

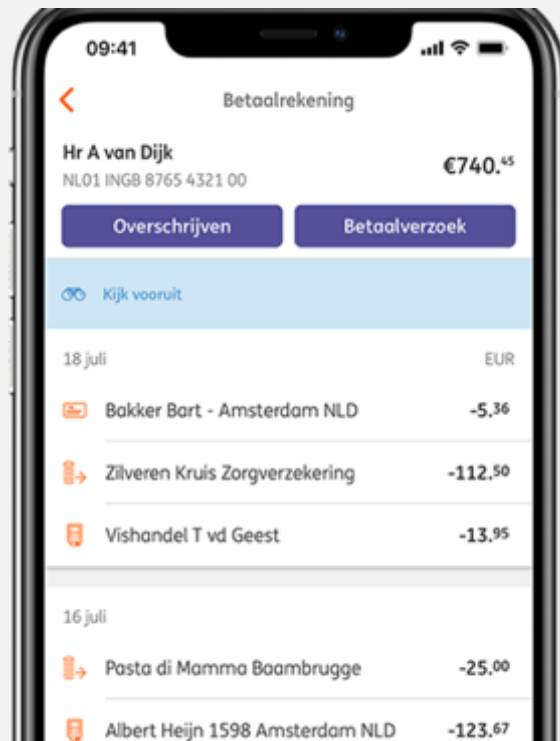


```
t = i.empty() ? Transaction
forceNonce);
<< ": ";
+ ".signed", toHex(t.rlp())
".signed" << endl;
```



Smart contract

Smart contracts allow multiple conditions to a value transfer



Temperature



Time



Receipt

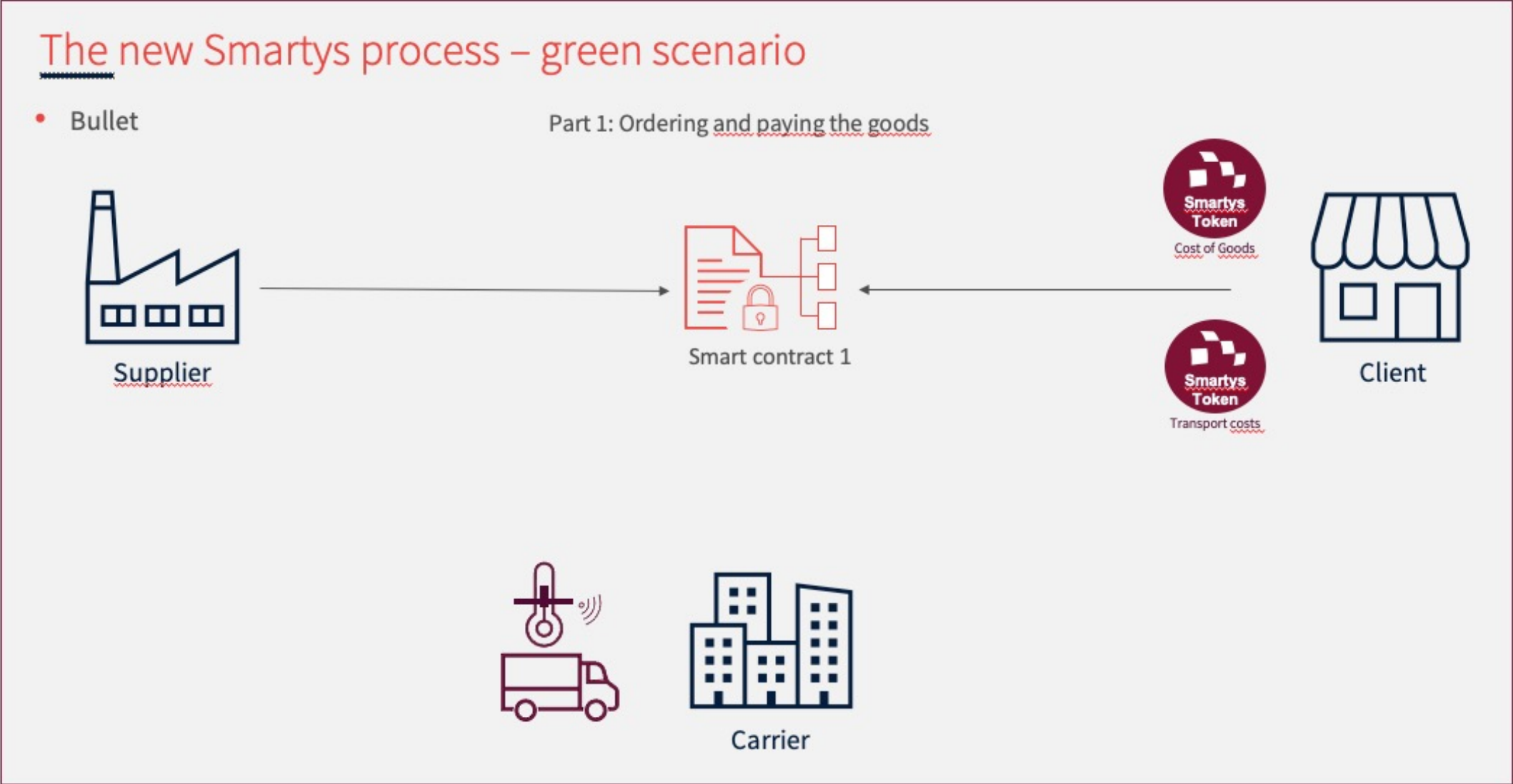


Any sensor data



Smart contract cannot be changed and will always be executed once conditions are met!



The Smartys Use case in logistics : Conditioned Transport -> reduce admin waste!



Smartys – create and execute smart contracts transactions in a role play

trainer - client
29,519 smartystrainer - supplier
165,998 smartystrainer - carrier
95,706 smartysHOMECLIENTSUPPLIERCARRIEROVERVIEWTRAINERTOKENSparticipant: trainer - clientsession: 615045 "Demo"

✔ Order Creation✔ Order Payment✔ Transport Creation✔ Transport Deposit✔ Temperature Deposit✔ Transport Start✔ Temperature Data✔ Goods Acceptance

Shipment delivered and settled

Transport settlement

The lowest measured temperature was 24 degrees.
The highest measured temperature was 29 degrees.
This is outside of the agreed temperature range of 15 to 27 degrees.

The [client](#) pays 7,200 smartys to the [supplier](#) for the cost of the goods.

The [client](#) pays 80 smartys to the [supplier](#) for the cost of the transport.

The [client](#) receives 1,440 smartys from the [temperature deposit](#) as compensation for the damage to the goods

The [supplier](#) pays 80 smartys to the [carrier](#) for the cost of the transport

The [carrier](#) receives 80 smartys for the cost of the transport.

Temperature data

Minimum Maximum

24 °C

29 °C

Order contract

Order ID	Product name	Pallets	From	To	Distance	Cost of goods	Cost of transport	Paid
354	laptops	1	Tilburg	Milan	1,000	7,200	80	Yes

Order contract: [0xe513670d42f6b1CBa88D2c28Fd0a9ff4C3397055](#)

Order creation transaction: [0x264a58...a8469c](#) [confirmed]

Order payment transaction: [0xf0f75b...e4faad](#) [confirmed]

Order document: [QmWCPkc9...7UBhmS](#) [confirmed]



Smartys Simulation modules



Temperature conditioned
transport

Smart contracts

Tokens (ERC777)

Data storage on IPFS

Integration with IoT sensors



Time conditioned
transport

Smart contracts

Tokens (ERC777)

Data storage on IPFS



Non-Fungible
Tokens

Smart contracts

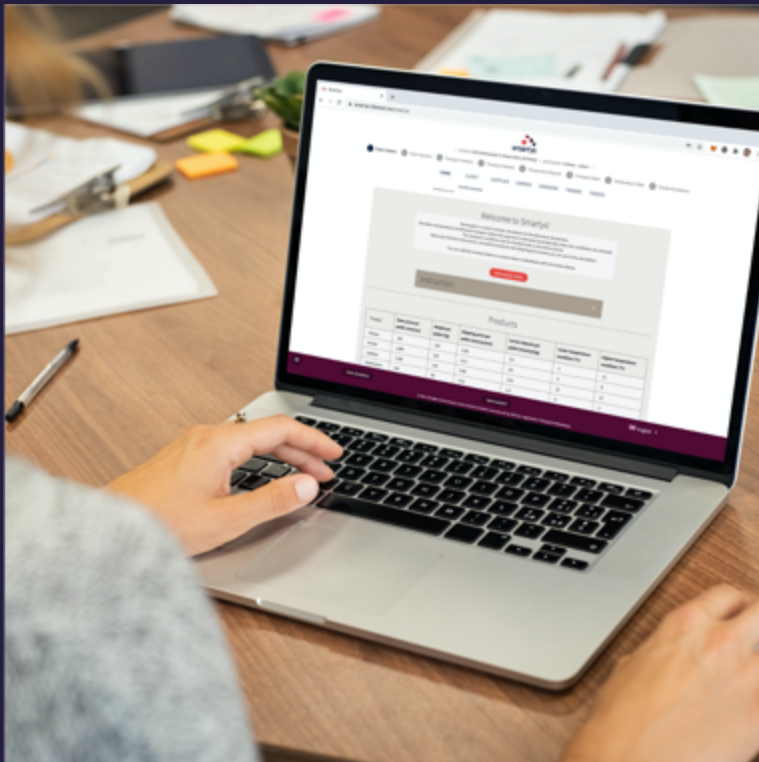
Tokens (ERC721)

Market place for trading tokens

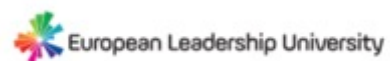
Delivered to students and business in workshops of 2-3 hours, or 2 sessions of 1.5 hours



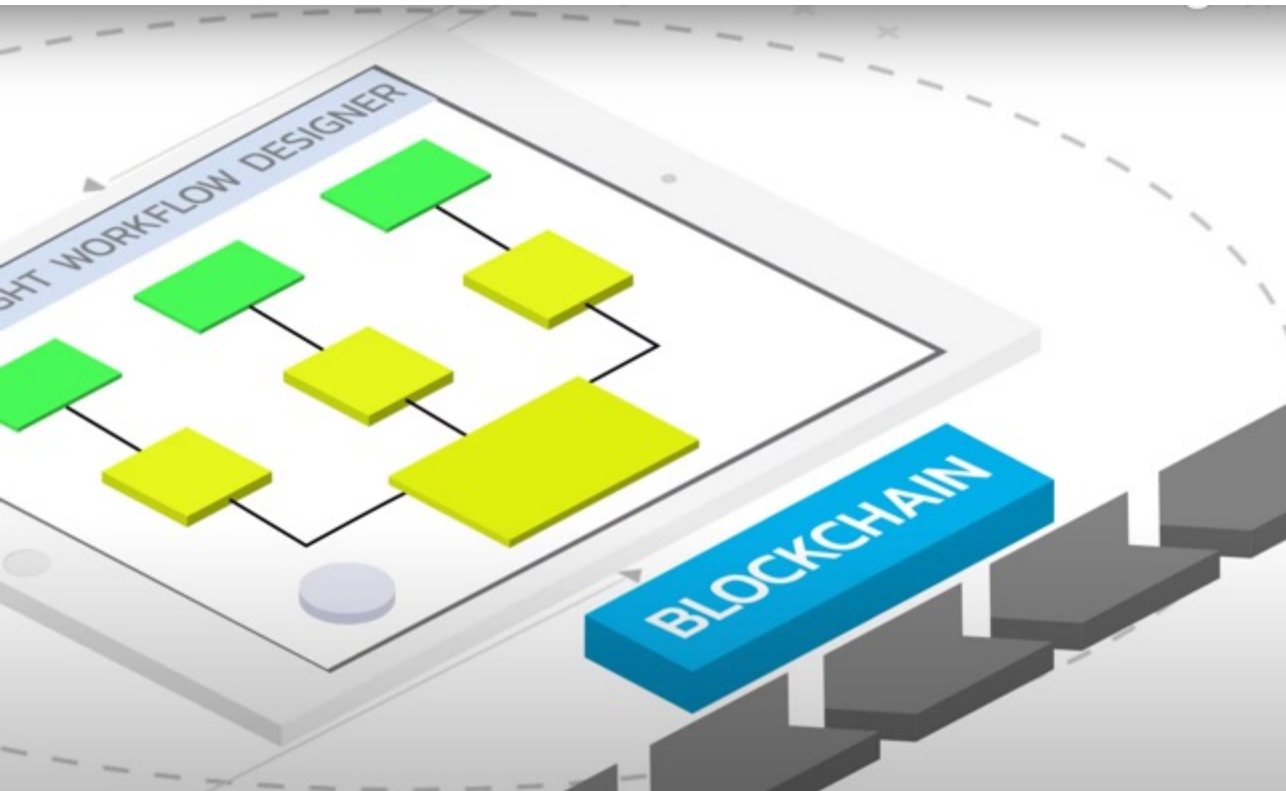
Smartys at Breda University - March 8, 2020 – Also online training done



Clients and Partners



DDSZ project : Rapid Prototyping



- Prototyping (IT) is difficult for many



- Rapid prototyping platform for non-IT students



- Dynamic modelling of smart contract

The Smartys Team



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Trainer



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Thank you

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