Blockchain, the internet of value exchange

ECO Kompetenzgruppe
Blockchain
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Quasar enables payments between devices
The Quasar ledger

... is a blockchain technology based infrastructure for instant payments between enterprises, consumers and the IoT

... has different types of wallets to comply with regulation and respect user privacy

... includes a connector between the traditional bank account and a digital cash wallet

How economy comes into the IoT

Issuing authority
Consortium wallets (banks)
Consumers & enterprises
Unbanked & devices

Identified owner
Without permission
Wallets form a new reconciliation eco system

- Wallets can create other wallets: *Virtual Private Payment Network*
- Every device becomes a “profit center”
- An audit is a view on the Quasar ledger
- Automatic real time clearing and settlement

**Virtual Private Payment Network**

**Wallet creation. Rules on node level**
- For receiving and making payments
- Signing payments
- Create child wallets

**Event based transactions on wallet level**
- Manually
- Time interval
- Incoming transaction
- Deposit and withdraw
The car as a profit center

... and the role of the gateway: Provide infrastructure and Identity as a Service

Tracking parts in aviation with the Quasar blockchain
Tracking parts is complex, needs compliance and efficient processing

A manufacturer creates a digital watermark for every part and sends this via a Quasar blockchain transaction to a compliant 3rd party

Compliance rules determine between which parties transactions are allowed
Benefits of the Quasar ledger

**Compliance**  *Who is allowed to create digital watermarks and who may send to whom*

**Transparency**  *Product life cycle visible, stops counterfeiting*

**Immutable**  *Historic data can not be changed, valuable for insurers and authorities*

**Not a single owner**  *Sharing actual information is beneficial to all*
Why blockchain

- Immutable distributed database
- No security risk, no investment in IT infrastructure
- Instant transactions validated by the system, not by a middleman
- Transparent

When (not) use Blockchain technology?

Do not use blockchain as a solution if:

- There is already a single trusted entity
  - Trust is derived from the distributed consensus of the "untrusted"
- When large sets of data need to be stored
  - Only simple and compact transaction records
- When high speed transaction handling is required
  - System consensus takes seconds or minutes
Public or private Blockchain?

- Public Blockchain
  - No central authority (not on technology, not on consensus)
  - Compliance issues

- Private Blockchain
  - Single central authority (both on technology and on consensus)
  - Why use blockchain?

- Consortium Blockchain
  - Cooperative authority (on technology, but not on consensus)
  - Permissioned access can also fix compliance issues

Benefits of Blockchain

- No need for a trusted central market authority
- Transparent (open) transaction database
- Open source and open API standards (free software and easy to connect to by a smart home or device)
- Very low cost-to-serve (no need for backups, inherent security, simple deployment)
- Privacy and secure communication by design
Quasar mobile app: claim module
Submitting, checking and instant payment/settlement of claims

1. Setup Account
   Einmalige Angabe der Kunden- und Versicherungsdaten

2. Scan Invoice
   Scannen der Rechnung per Handy

3. Check
   Automatisches Erkennen des Rechnungsgegenstands und Betrags

4. Verify & Process SV Claim
   Schadensfallbearbeitung
   Automatische Rückmeldung des erstatteten Betrags

5. Verify & Process Private Claim
   Schadensfallbearbeitung
   Automatische Rückmeldung des erstatteten Betrags
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50% of all blockchain use cases are in banking

- Savings > 80 billion $
- Cross border (P2P and B2B) payments
- Trade finance
- KYC and AML management
- Identity fraud

Optimizing the past, improving internal and inter-banking processes

SOURCE: AITE Group, Tabbs Group, CoinDesk
The Internet of Things, a key concept underpinning Industry 4.0

- 50 billion devices in 2020
- 1,9 trillion dollar economy
- 40% of all internet data traffic comes from IoT devices

Blockchain can be used by the IoT for

- Ownership
- Data security and integrity
- Settlement
- Smart contracts

solving whom to pay, when to pay and how to pay
Quasar enables payments between devices

Achievements
Clients

HypoVereinsbank
Member of UniCredit
AIRBUS
e-on