How public agencies shape blockchain consortia – Lessons from the Cardossier

Prof. Dr. Gerhard Schwabe
Situation in Switzerland

- 350,000 new registrations per year
- 4.5 Mio registered vehicles in Switzerland
- 900,000 vehicles change their owners every year
- 7-10 years is the average lifecycle of a vehicle
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→ www.cardossier.ch
Today’s Situation

Figure 2. High-level architecture of the proposed solution

- Manufacturer
- Online Plattform Import, Car Dealer
- Insurance
- Regulator
- Garage
- Scrap Merchant
- Car Sharing
- Car owner
Why a Distributed Ledger?

- **Car** company
- **Car sharing**
- **Sharing** level architecture of
- **Car**
- **Company**
- **Sharing**
- **2**
- **Merchant**
- **Company**
- **2**
- **High**
- **Scrap**
- **2**
- **High**
- **Scrap**

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- **Manufacturer**
- **Import**, **Car Dealer**
- **Online Plattform**
- **Records of asset transfer**
- **Shared Ledger**
- **Smart Contracts**
- **Conditions for asset transfer**
- **Dealer**
- **Insurance**
- **Garage**
- **Regulator**
- **KANTON AARGAU**

**cardossier**

**mobility**
car sharing
Solution – Permissioned Blockchain

Blockchain-based digital Dossier
- Collection of all data through the life cycle of a car
- Transparent, immutable and secure
- Each party operates a node

Secure data access
- Data encryption and access control
- Data Protection, Governance und Compliance
- Enterprise identity management

Smart Contracts (ChainCode)
- Implemented business logic
- Event-based data model
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Car changes
Changes from original state (2)

- Exhaust, Recorded 11.07.2017
  Bastuck Endschalldämpfer mit Doppel-Endrohr 2x Ø 76 mm LH + RH für AUDI A3 Sportback (8PA) 1.6 FSI - 85 KW / AUA3/8P-QSB76

- Wheel-Set, Recorded 11.07.2017
  R³ Wheels R3H1 black-polished

Recalls

- Resolved 11.07.2017
  Wegen eines möglichen Softwarefehlers an den Airbags ruft Audi allein in Deutschland etwa...

- Open 18.03.2018
  Audi ruft in Deutschland 330.000 Autos wegen Brandgefahr in die...

Reports

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AMAG Leasing
- Handed vehicle ownership to Mary A.
- Vehicle immatriculation

AMAG Retail
- Prepare vehicle for handover.
- Conducted work 01
Distributed Product and Service Innovations

Instant Change of Ownership
.... that question the tasks of participating organizations
Shared insights in customer behaviour and preferences ...

...controlled by "Self-Sovereign Identity"
Current paper version – 2 days

With Car Dossier – 1 Minute
Roles of Public Administrations

Administrations as sources of data

Administrations of users of data

Trustless System vs. Trust in Institutions

Platform as a private good vs. Platform as public good

Car data as a private good vs. data as public good

Data quality as a private issue vs data quality as a public good
Private Dapps on a public data infrastructure

Cardossier Dapp Store

Cardossier Core

Secure Blockchain for Business
Is Cardossier just one case?

Georgia Pilots and Sweden Ponders – Is Blockchain the Future for Europe’s Land Registries?

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Informationen und Video:
www.cardossier.ch