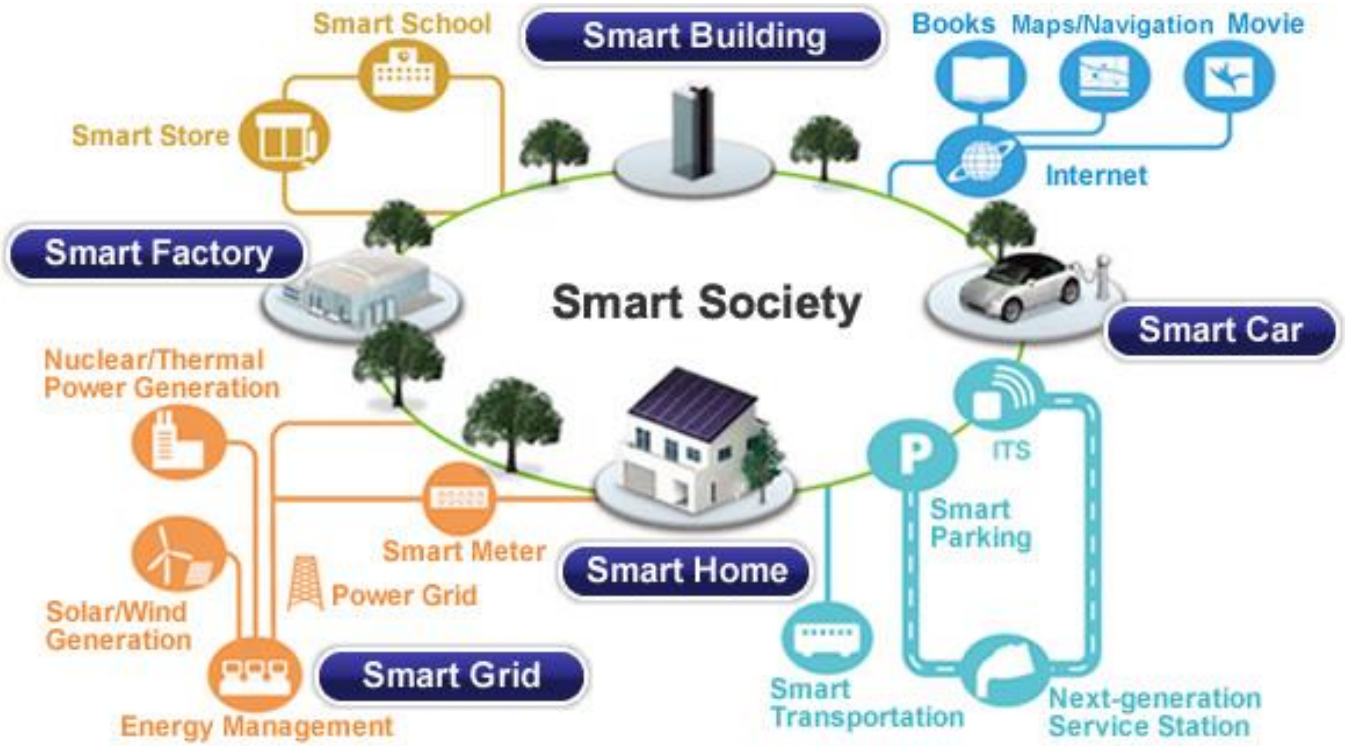
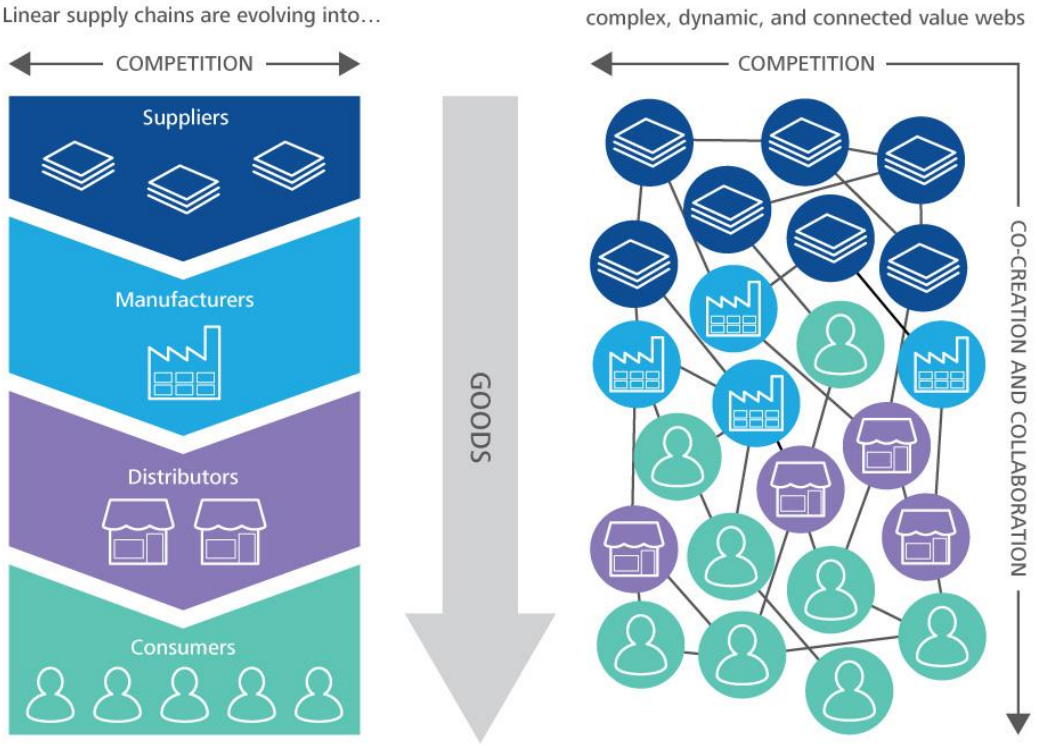

ALASTRIA
NATIONAL BLOCKCHAIN ECOSYSTEM
APRIL 2017

The society of the future is Smart



EVERYTHING is interconnected

Figure 1: Supply chains evolve into value webs



Source: Deloitte analysis.

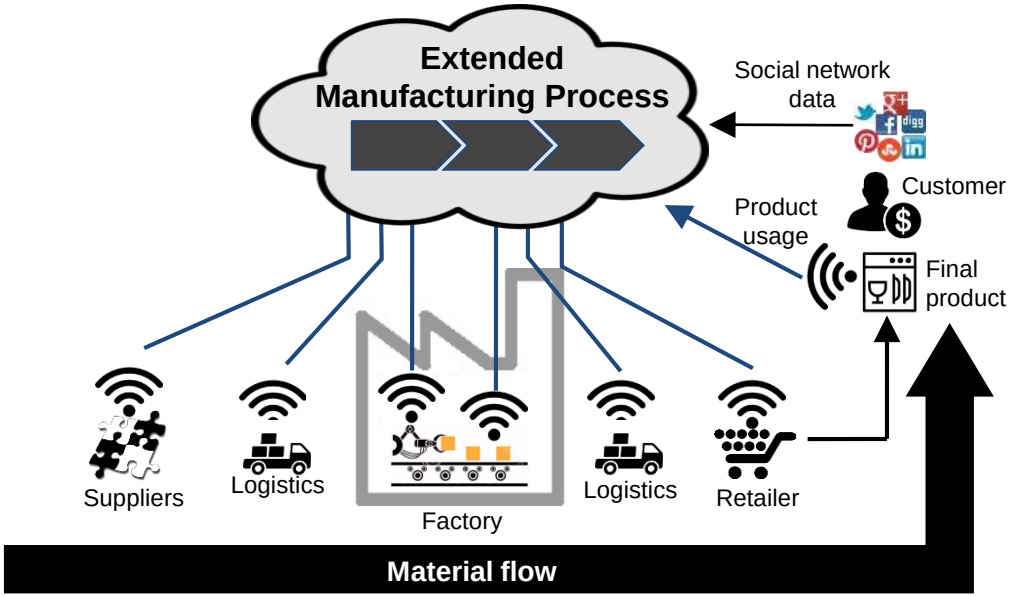
Graphic: Deloitte University Press | DUPress.com

Beyond Digital Transformation of single companies

Ecosystem digitalization

- **Beyond data sharing**
- **Secure value exchange**
- **Avoiding central entities (companies are peers)**
- **Avoid power imbalances in the ecosystem**

Universal Collaborative Platform



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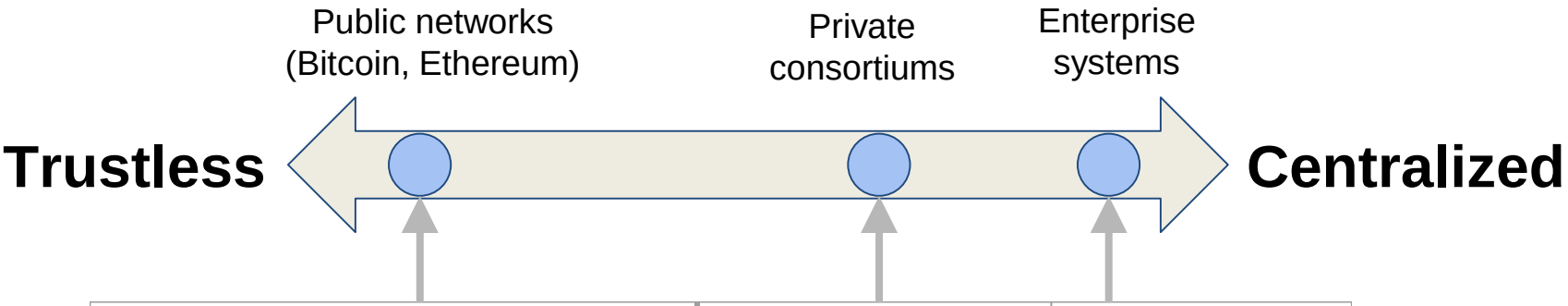
¡HOLA, ALASTRIA!

World's first nation-wide, multi-sectoral, enterprise grade, permissioned Blockchain network

... made in Spain ;-)

Current situation



Everybody votes	Vote only few	Vote only one
3 - 10 transactions/sec	High performance (100K tx/s)	
PoW algorithm, requiring very short incentivisation to miners	More efficient algorithms, without mining	
High transaction costs, and high volatility	Low transaction costs, predictable	

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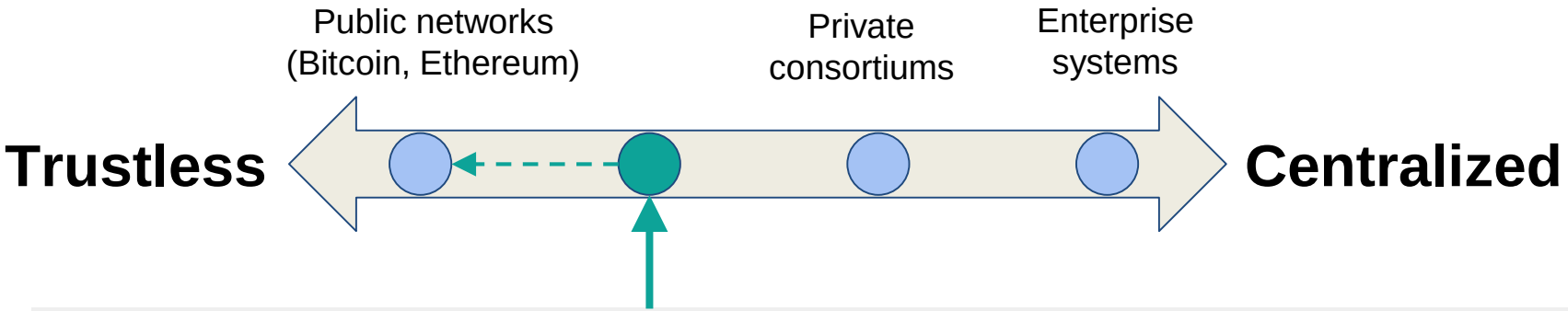


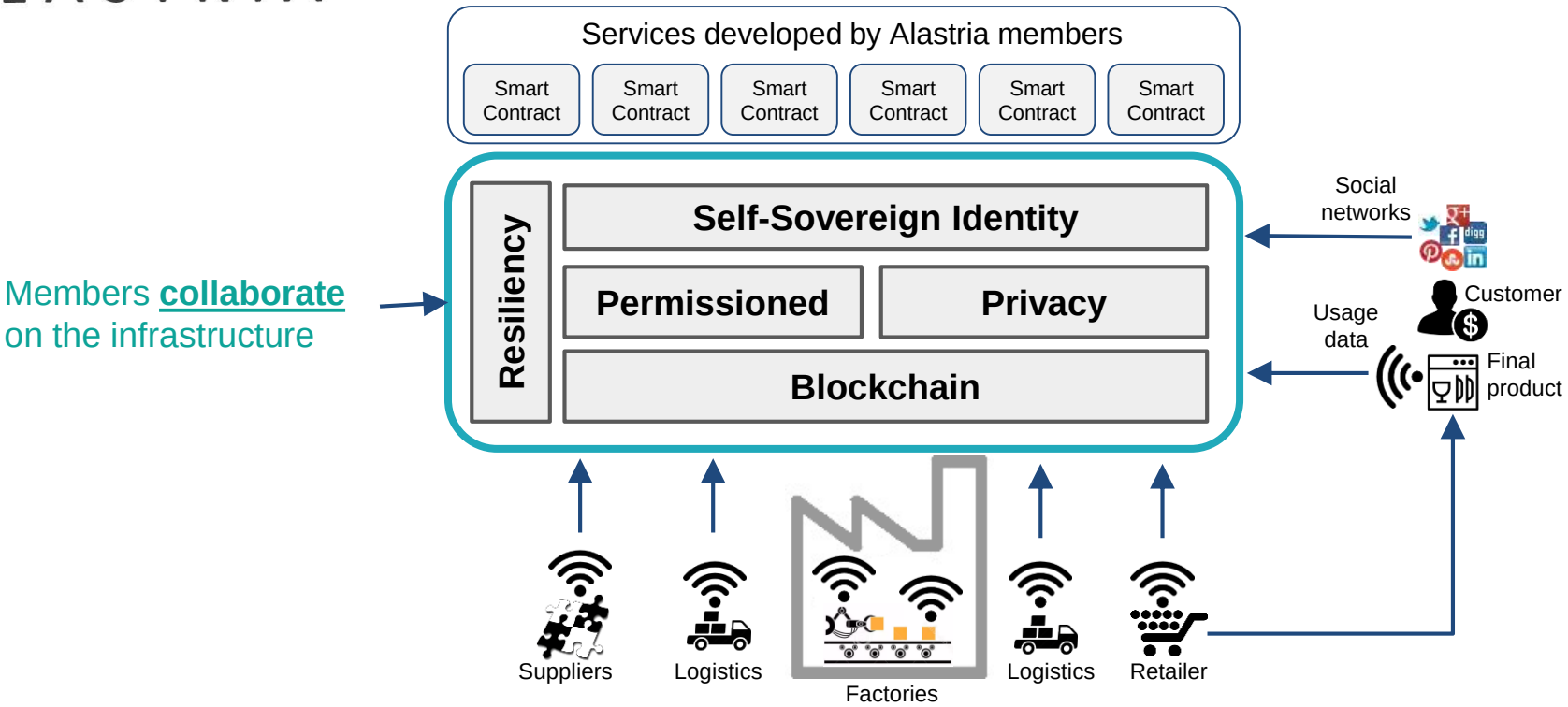
<u>Public-Permissioned network</u>, compatible with <u>regulation</u>

- Depends on a trusted validator set => “Good enough”
- No cryptocurrency embedded => low and predictable transactional cost
- Higher performance and scalability (>1.000 tx/sec)
- Transaction finality in one block, with legal validity (**legal identities**)

… but requires implementing a novel <u>Decentralized Governance Model</u>

National Blockchain Network

Nonprofit association, open to everyone



National Blockchain Network

Nonprofit association, open to everyone

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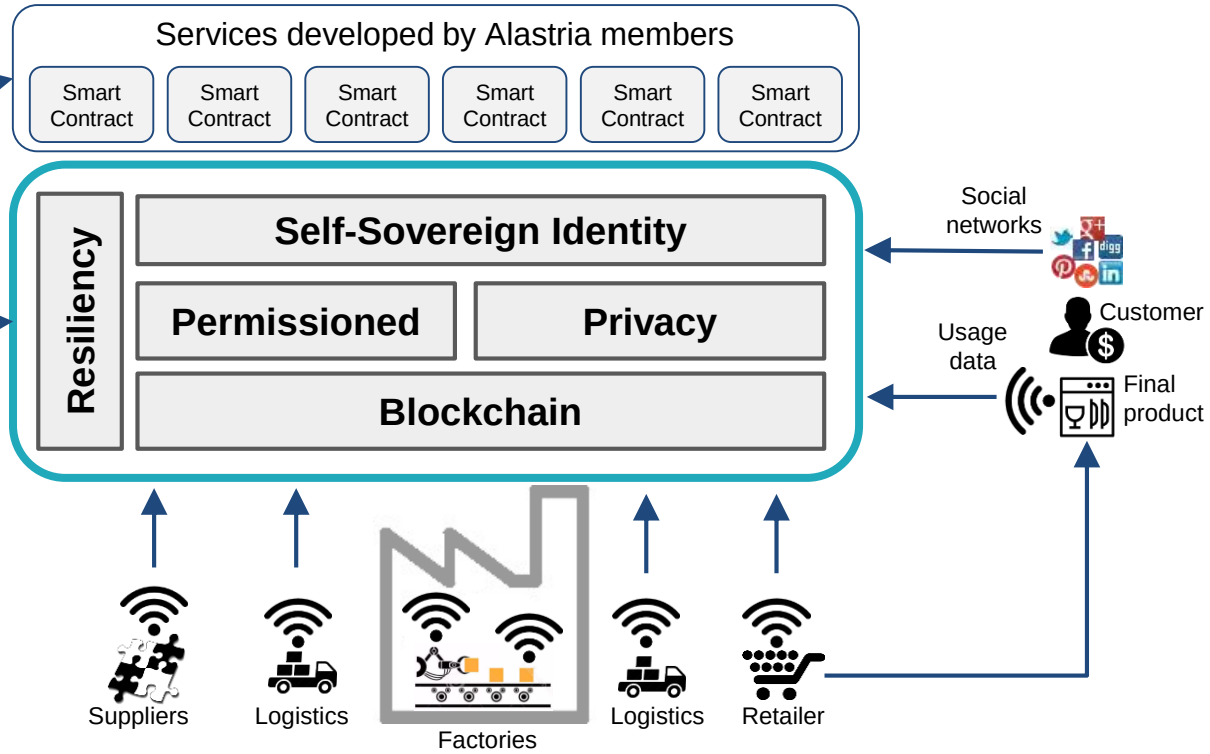
Members **compete** on the applications

Members **collaborate** on the infrastructure



Over 200 members and growing ...

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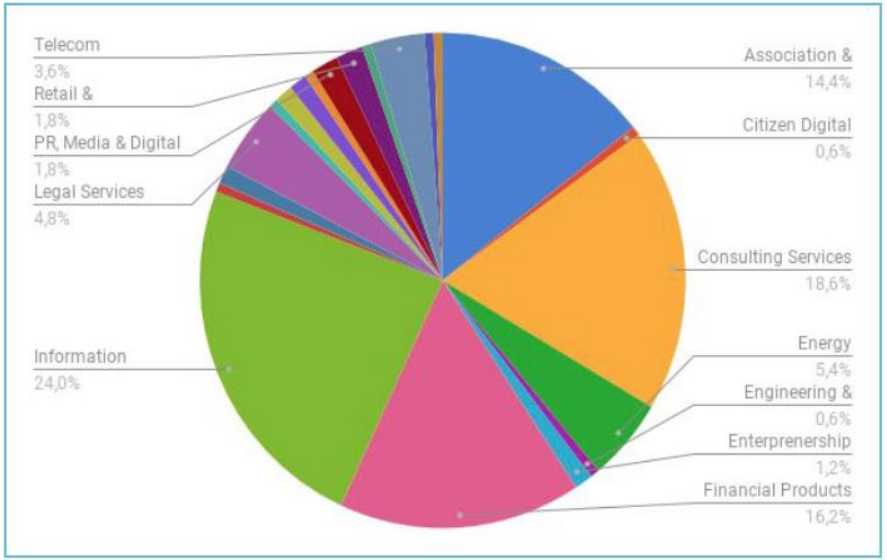
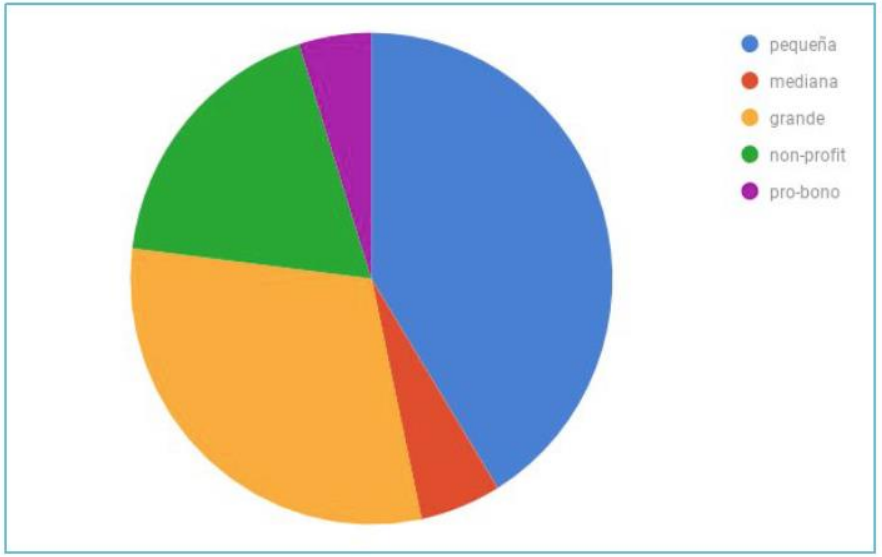
BY SECTOR



BY SIZE/TYPE



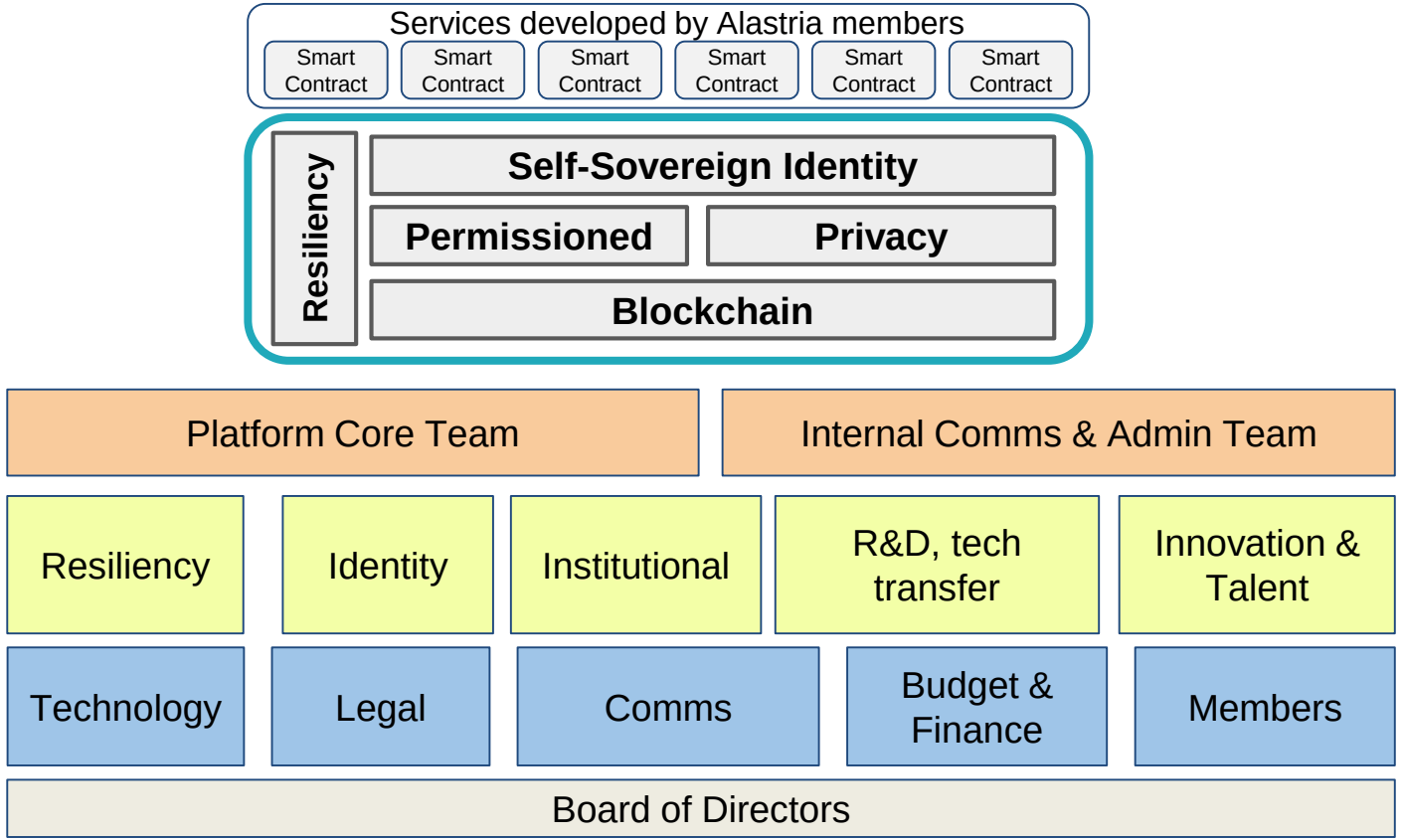
Digital Single Market

DIGIBYTE | 10 April 2018

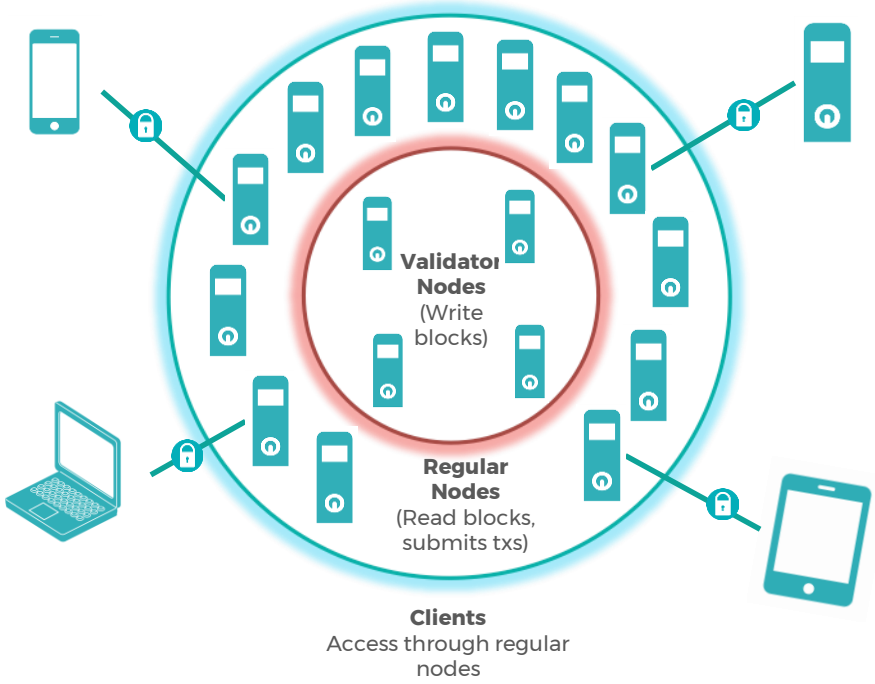
European countries join Blockchain Partnership

22 European countries have signed a Declaration on the establishment of a European Blockchain Partnership. The Partnership will be a vehicle for cooperation amongst Member States to exchange experience and expertise in technical and regulatory fields and prepare for the launch of EU-wide blockchain applications across the Digital Single Market for the benefit of the public and private sectors. This

How are we organized?

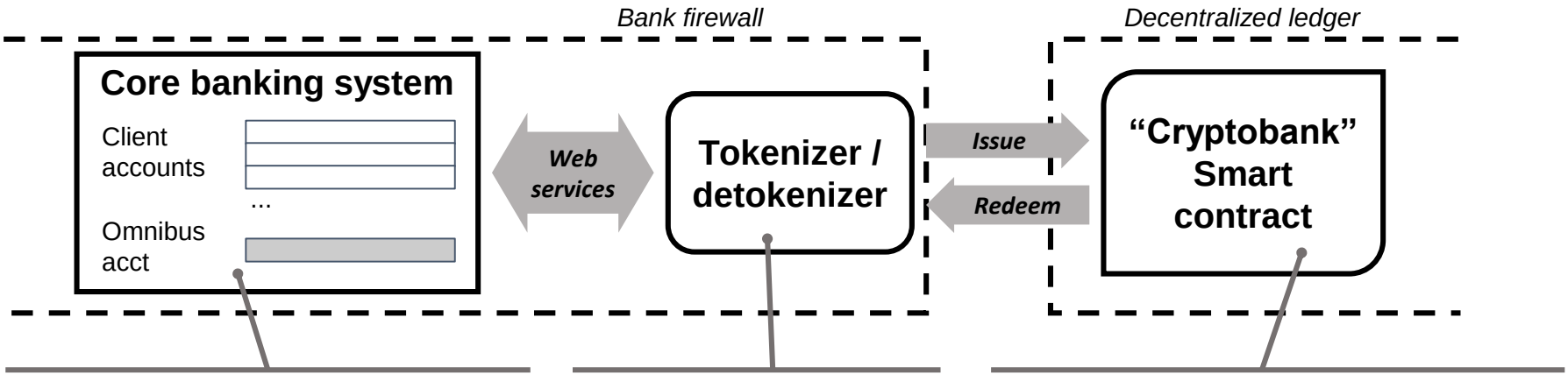


A permissioned, governed network



- ✓ Initially implemented with Quorum (enterprise Ethereum)
- ✓ Permissioned => governed
- ✓ Supporting privacy and at the same time traceability

Tokenization: blockchain in the real world



- "Real" (fiat) money stays in an omnibus account in the bank
- Easy integration through web services

- Tokenizer deployed within bank's data center (no external API calls needed)

- Client digital balances issued on a smart contract, backed 1:1 with funds in the omnibus account

… and now money is digital and globally interoperable (through other smart contracts!)

Anything (besides money) **can be tokenized!!**

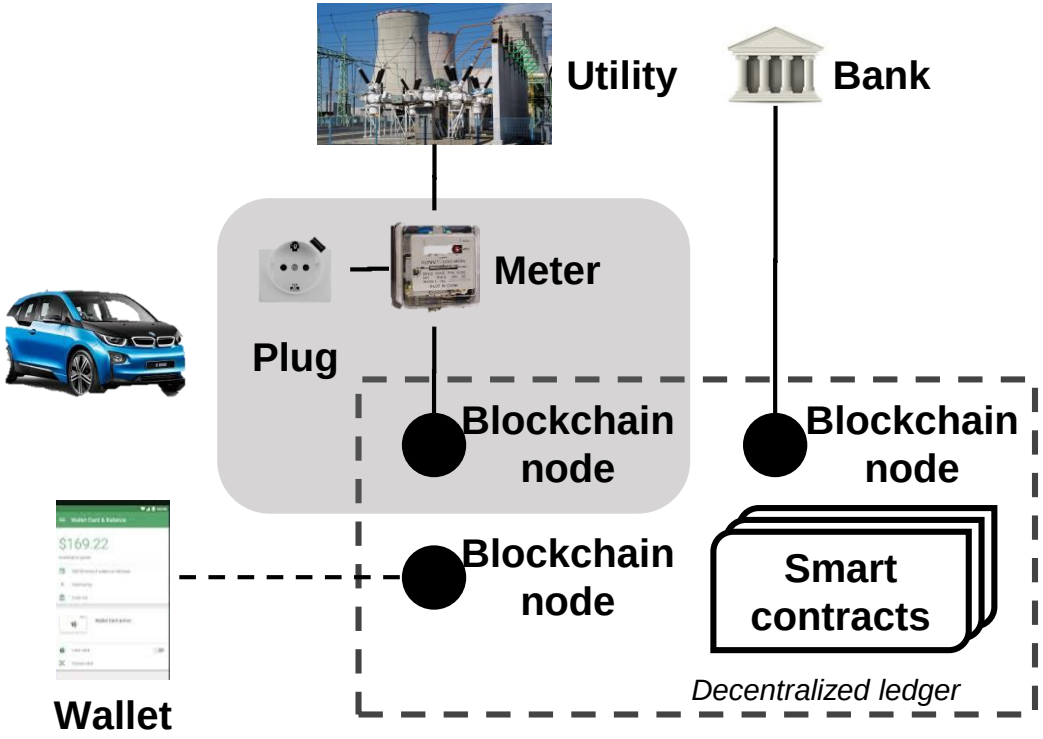
Applications of tokenization

Anything involving different, disconnected parties needing to transact on a legally binding basis:

- Digital cash, digital central bank money
- International payments, micropayments, payments for digital services
- Capital markets trading, settlement, collateral management, syndicates, asset management
- Digital identity, asset registries
- Voting, public administration, government benefits
- Supply chain, trade finance
- Digitalization of equipment use (e.g. car sharing, car recharging, shared computing resources)
- Workflows (e.g. Internal audit, regulatory approvals, insurance claims)

… and the combination of the above!

Applications: an example



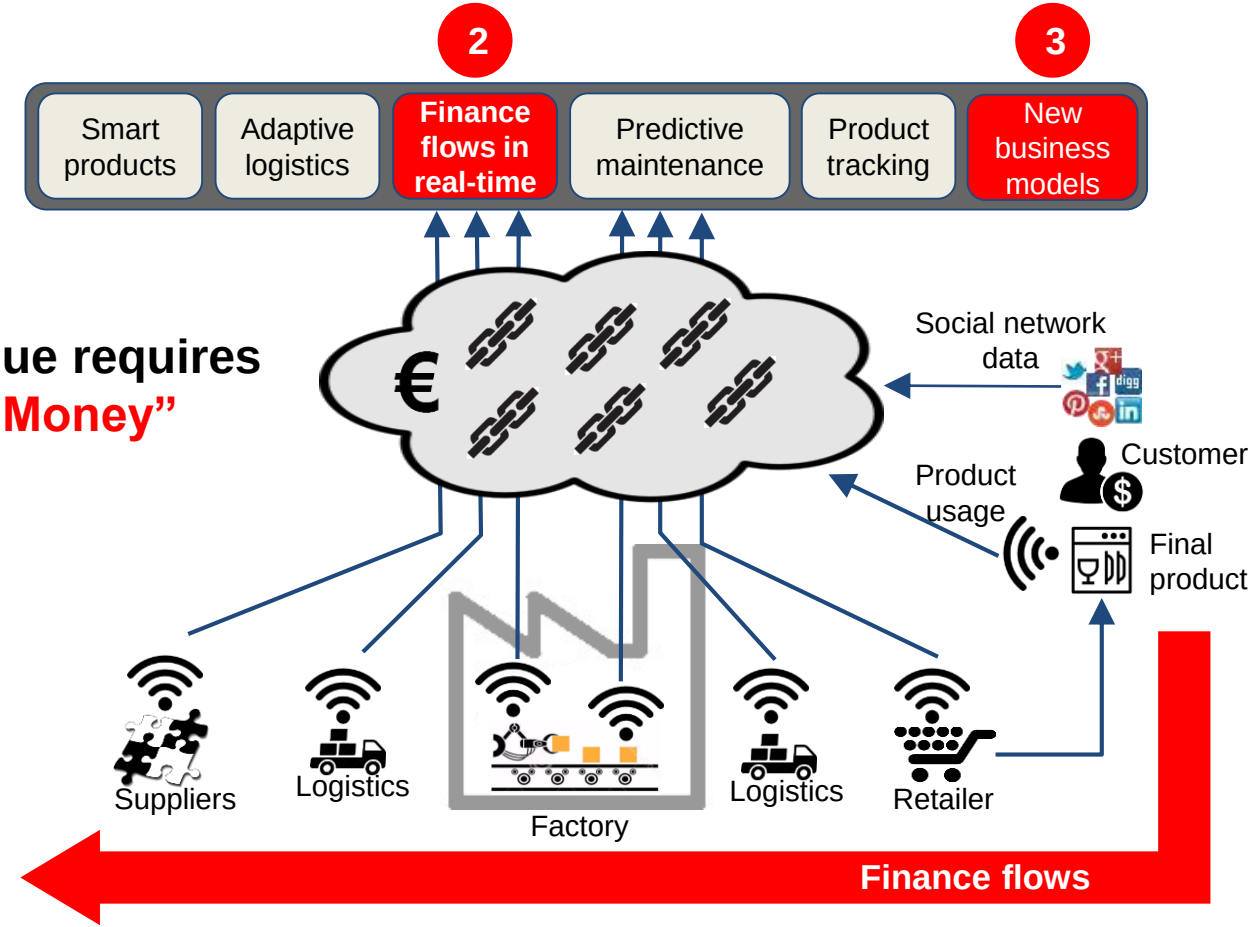
- ✓ Car and meter authenticate to each other
- ✓ Meter delivers energy to the car
- ✓ Car (as delegate from User) pays to meter in real-time
- ✓ Household owner redeems money from bank whenever she wants

… the concept allows for the "uberization" of electric car charging

What could be the role of banks?

Exchange of value requires
“Digital Fiat Money”
1

Access to real-time operational data allows innovative financial services



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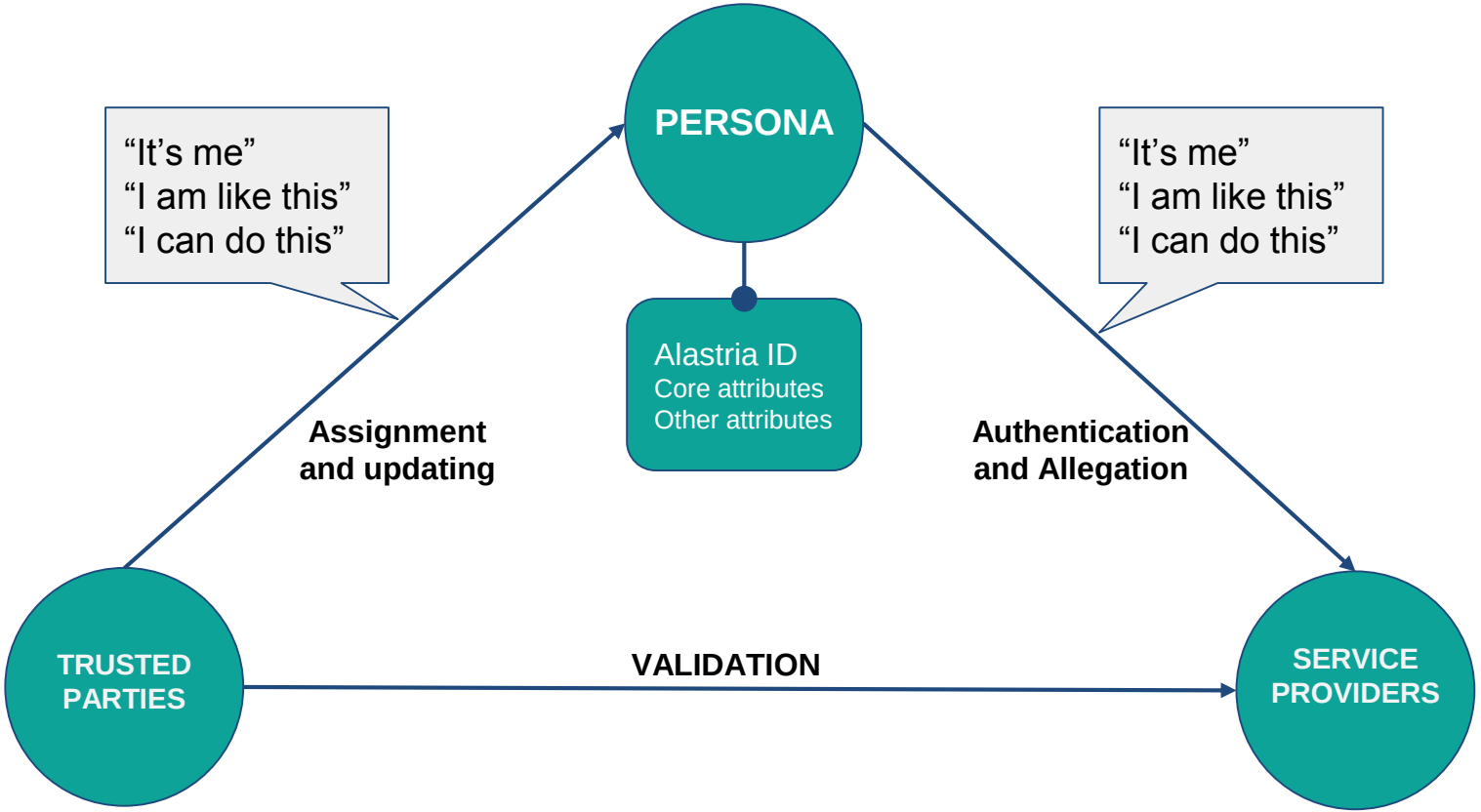
KEY IDEAS

1. Permissioning => **high performance**
2. Tokenization => **digitization**
3. Collaboration large and small => **innovation**

Alastria ID:
Legal Identity on the Blockchain

Alastria ID: Attributes and attestations



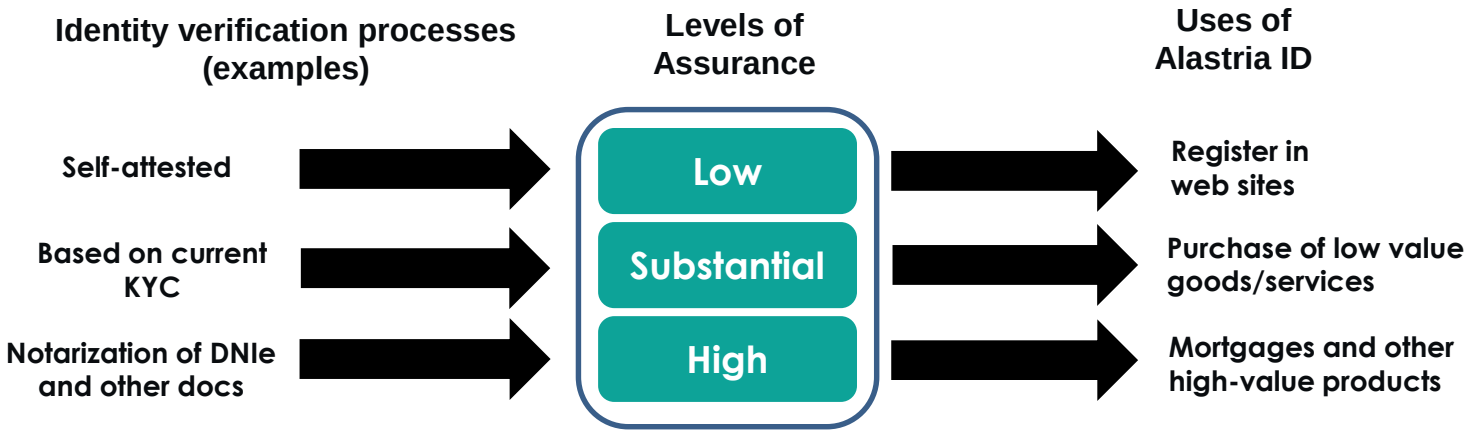
Alastria ID: Attributes and attestations

	For individuals:	For legal entities:	For assets:
INHERENT ATTRIBUTES Attributes that are intrinsic to an entity and are not defined by relationships to external entities.	• *Age* • *Height* • *Date of birth* • *Fingerprints*	• *Industry* • *Business status*	• *Nature of the asset* • *Asset issuer*
ACCUMULATED ATTRIBUTES Attributes that are gathered or developed over time. These attributes may change multiple times or evolve throughout an entity's lifespan.	• *Health records* • *Preferences and behaviours (e.g. telephone metadata)*	• *Business record* • *Legal record*	• *Ownership history* • *Transaction history*
ASSIGNED ATTRIBUTES Attributes that are attached to the entity, but are not related to its intrinsic nature. These attributes can change and generally are reflective of relationships that the entity holds with other bodies.	• *National identifier number* • *Telephone number* • *Email address*	• *Identifying numbers* • *Legal jurisdiction* • *Directors*	• *Identifying numbers* • *Custodianship*

Source: A Blueprint for Digital Identity – World Economic Forum, Agosto 2016

Alastria ID: Legal Identity on the Blockchain

- Allows implementing products and services complying with Spanish (and European) regulation.
- Self Sovereign Identity (SSI), for protection and empowerment of the user.



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1. Permissioning => **high performance**
2. Tokenization => **digitization**
3. Collaboration large and small => **innovation**
4. Digital identity => **legally binding**