Imagine a world where no utility company exists - How the Sharing Economy and Blockchain is disrupting the energy sector!

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innogy SE · Kerstin Eichmann· 29 January 2017

"Bitcoin. Uber. Self-Driving cars. What happens when you mash the three together? The Self-Owning car. A car that pays for it's Toyota lease, it's insurance, and it's gas, by giving people rides. A Car that is not owned by a corporation. It's an economically independent vehicle. This has never happened before and that's just the beginning."

Andreas M. Antonopoulos

Facts and Figures

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9 billion people on earth by 2050

50 Billion connected devices by 2020

1.4 Millions of people having PV on their roof in Germany

Cost of solar has already dropped by **70%** since 2009

Cost of solar will further drop by **50%** by 2025

60% energy consumption by renewable energy by **2035**

80% decarbonization by **2050**

2 Million households in Germany will have solar panels on their roof in 2020

Data Source: Cisco, TAI Germany Trade and Invest, United Nations Department of Economic and Social Affairs, bmwi, national geographic

What's the myth of the so-called sharing economy?

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1

It's just a Taxi App.

2

Middleman. It's an intermediary that aggregates cars and drivers on a decentralized platform.

3

No real Peer-to-Peer. Even if the idea is P2P, the business model is centralized.

4

Centralized ownership Model. A few people make most of the profit operated by billions of people.

5

Data Privacy. Make money with significant amount of data from both sides of the equation.

6

Centralized ecosystem. Monopolistic structure with a centralized database.

How blockchain can disrupt the disrupters ...?

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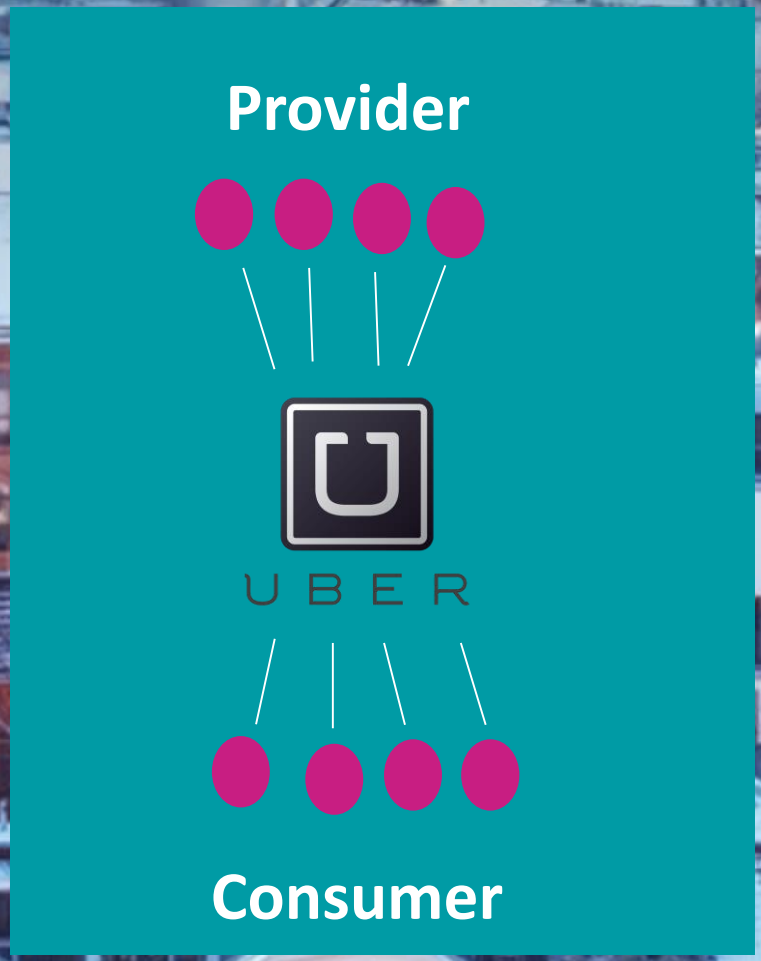
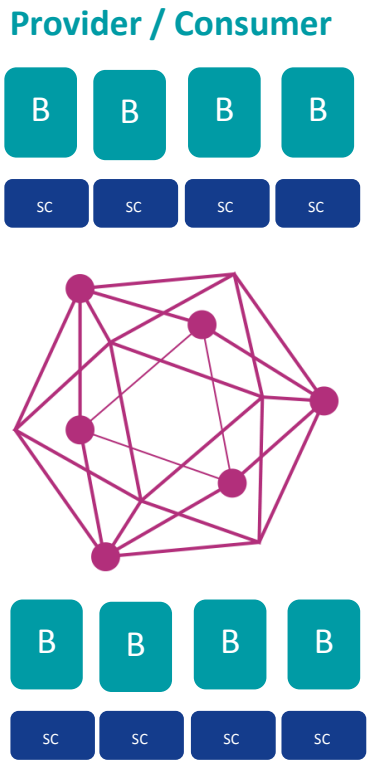
Traditional transaction model
Intermediary platform, e.g. UBER relying on a central authority – transaction data is primarily stored by the central authority.



Blockchain removes the need for a middleman!



1

Trust model. It offers a way for people who do not know each other to do business.

2

Removal of the middleman platform. Transactions are carried out directly between providers and their customers with no need for third-party intermediaries.

3

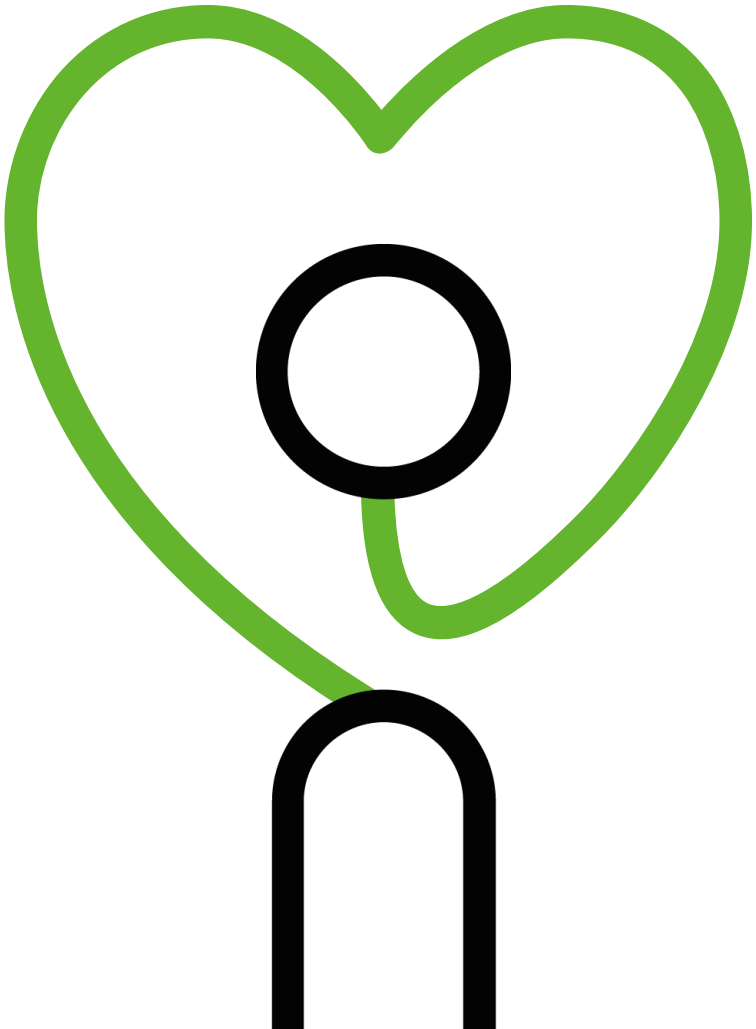
Security.
Customer-Data ist not stored in a centralized data-base but on many node of the network. Less prone to attacks (DDOS).

4

By the community for the community. It's a decentralized network of machines that are operated by the community for the community to validate transactions without any centralized entity – like the idea of the internet many years ago.

5

Trust embedded & self-executing. Smart Contracts can specify terms under which obligations are fulfilled & can self-execute actions like sending a payment.



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Blockchain has the potential to change everything … even how we deal with the supply of local renewable energy …

The origin and ownership of Energy ...

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1

Blockchain
identifies the ownership of energy as it is generated.

2

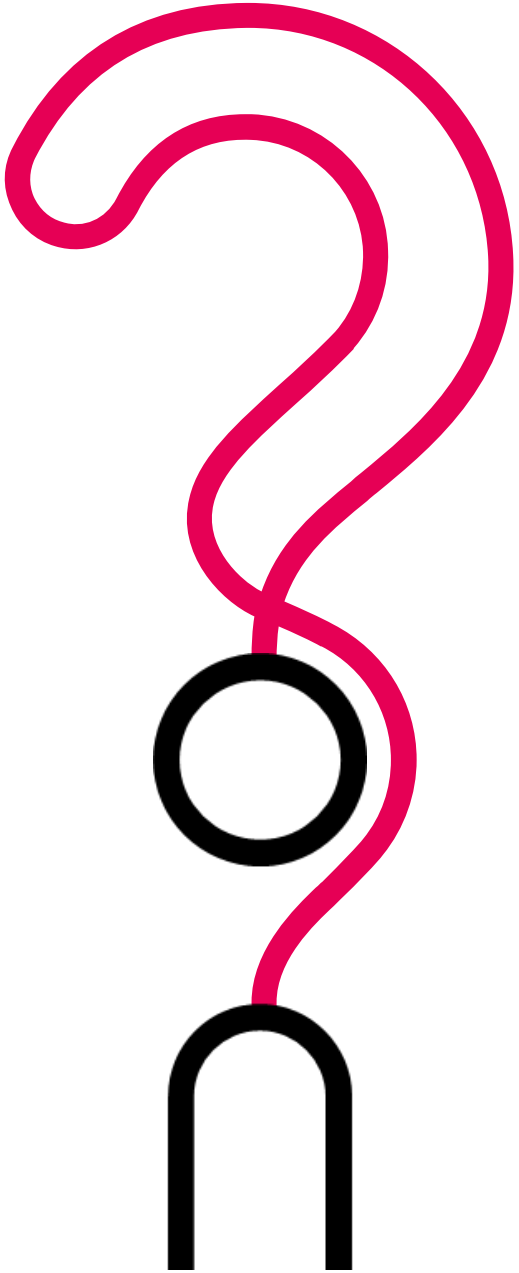
Blockchain manages multiple trading
agreements between you and the person you wish to purchase or sell power.

3

No additional margins or market costs.
between local energy

4

Blockchain tracks the movement of electricity
From point to point while simultaneously handling the financial transaction.



What's the problem of the traditional grid and renewable energy generation?

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1

Solar panel production
Ccnnot be controlled in terms of output.

2

Traditional grids
are designed unidirectional.

3

Renewable energy production
Goes in the reverse direction.

4

Smart technologies are needed that are able
to deliver balancing power to manage fluctuations .

Blockchain is not only the right tool to connect people, but also to distribute energy in a smart way …

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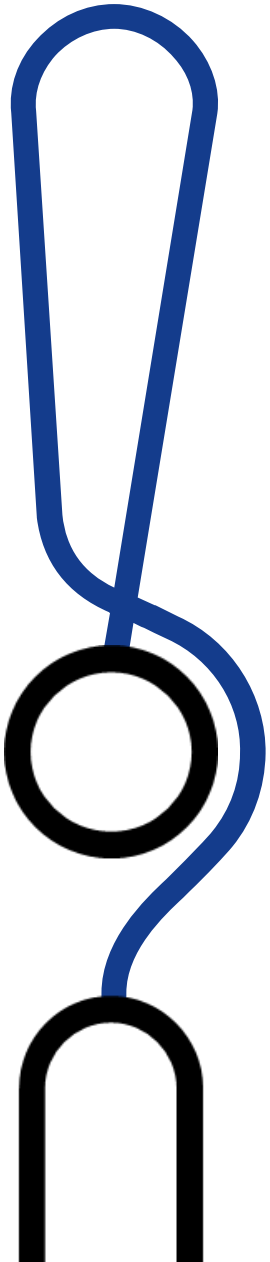


1

Microgrids are small versions of the centralized electricity systems.

2

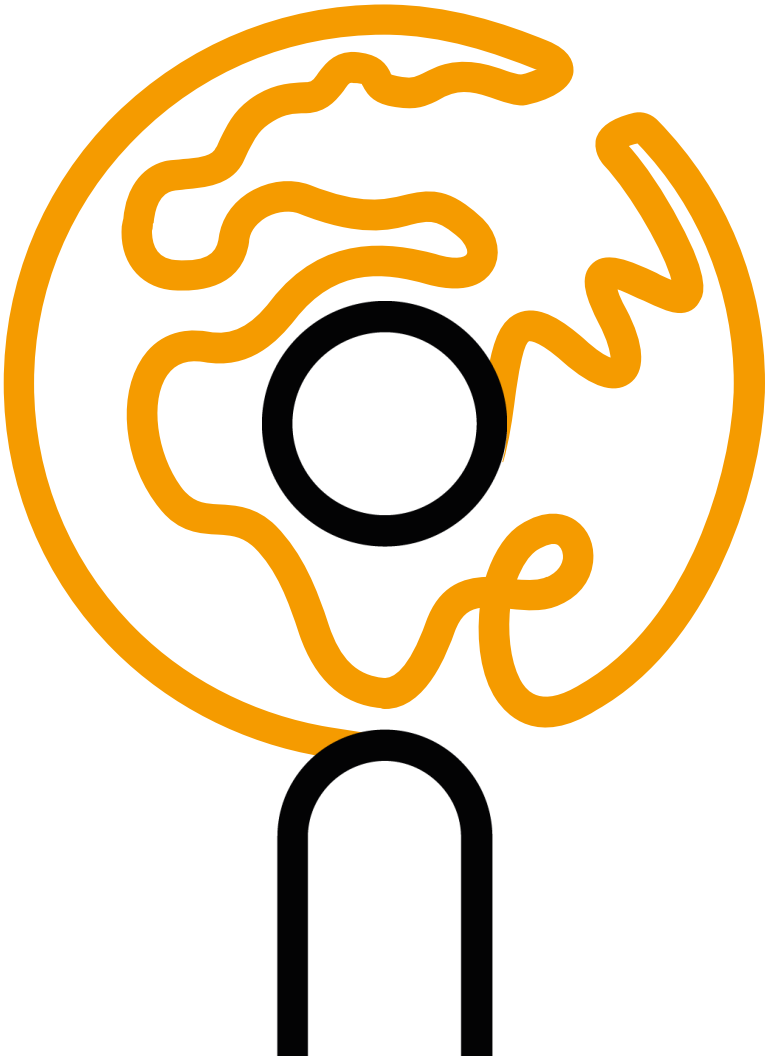
All transactions can be monitored in real time by smart contracts who self-execute payment, settlement and clearing without any middleman**.**

3

Microgrids generate, distribute and regulate the flow of electricity to consumers locally.

4

Blockchain
Provides the perfect foundation for a real p2p sharing economy.



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But what is the role of utility companies like Innogy …?

Innogy SE - Kerstin Eichmann

INNOVATION HUB by innogy

Business transformation:

WE

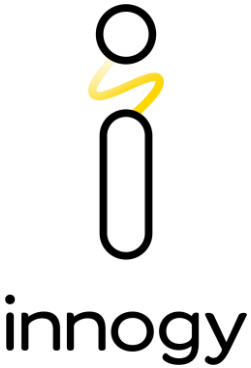
Have to reinvent ourselves and explore new areas where nobody has been before – together with the Government and regulations.

It‘s not only about decentralized energy, but also new payment gateways, autonomous driving, mobility and the genesis of things with autonomous 3D printing supply chains.

With the mass adoption of Blockchain enabled products, we need new standards with regards to:

- Tax effects
- Data security
- Identity management
- Payment
- Tokenization of assets

Thank you very much!



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