

3 Protect Data

- Protecting the Security & Integrity of Data

(6) Smart Contracts



“In a smart contract approach, an asset or currency is transferred into a program and the program then runs this code and at some point it automatically validates a condition and it automatically determines whether the asset should go to one person or back to the other person, or whether it should be immediately refunded to the person who sent it or some combination thereof.”

-Vitalik Buterin,
Programmer at Ethereum



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Content:

- 1. Motivation**
- 2. Data Integrity**
- 3. Bitcoin Crypto Currency**
- 4. Blockchain Technology**
- 5. Bitcoin Miner**
- 6. Smart Contracts**
- 7. IOTA**
- 8. Crypto Currency Opinions**
- 9. Summary**

Smart Dubai - Dubai Blockchain Strategy

"DUBAI WILL BE THE FIRST CITY FULLY POWERED BY BLOCKCHAIN BY 2020"

His Highness Sheikh Hamdan Bin Mohammed Al Maktoum
On the launch of the Dubai Blockchain Strategy, October 5 2016

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OUR VISION IS TO MAKE DUBAI THE HAPPIEST CITY ON EARTH

The Smart Dubai initiative was founded following the vision of His Highness Sheikh Mohammad bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, to make Dubai the happiest city on earth. Participation from all city stakeholders — residents, visitors, business owners, parents and families — is a cornerstone of our strategy.

[LEARN MORE](#)

Smart Dubai - Dubai Blockchain Strategy

BLOCKCHAIN WILL DO FOR
TRANSACTIONS WHAT THE INTERNET DID
FOR INFORMATION



3 Protect Data

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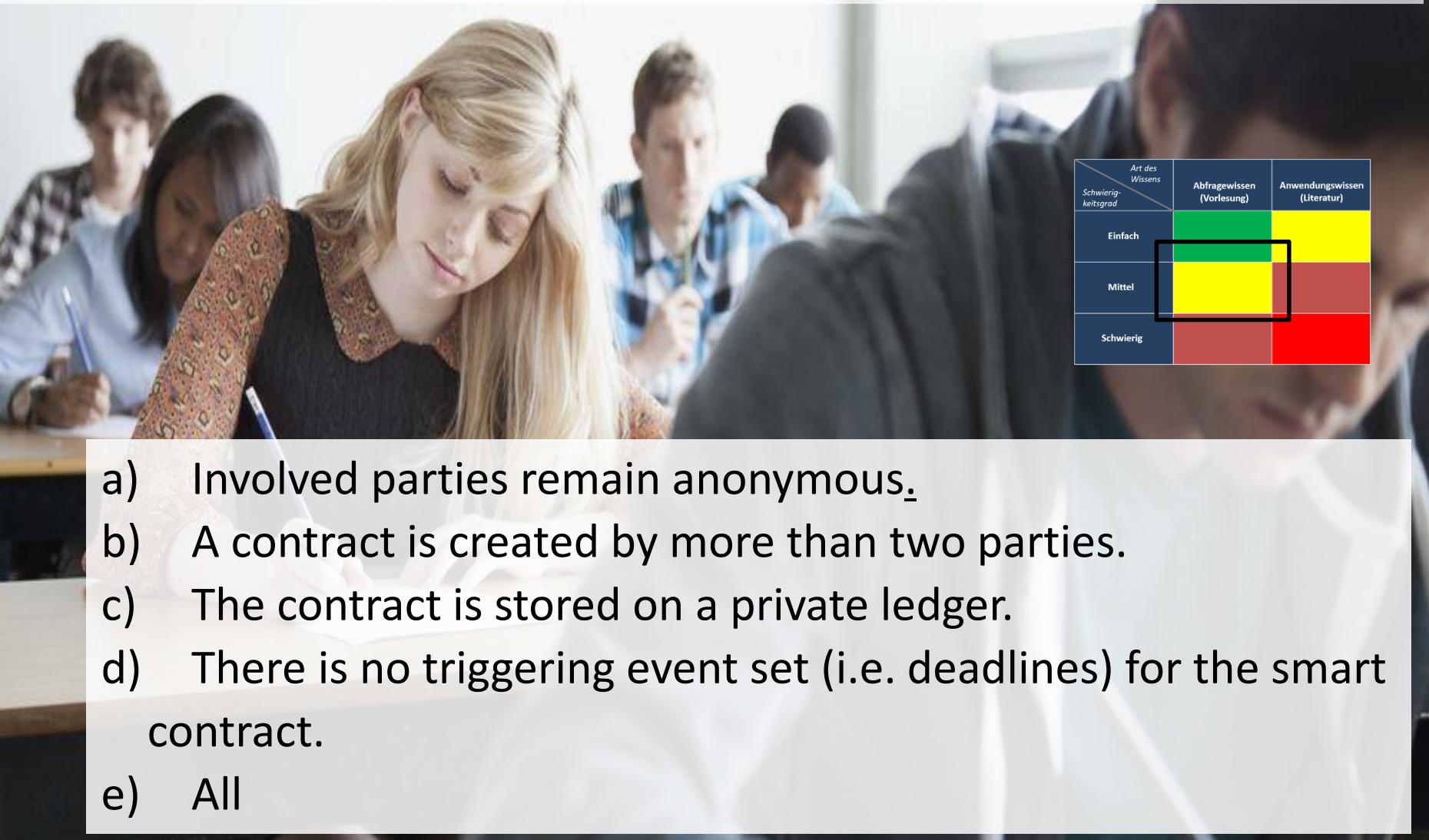
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- Data is the new **Gold**.
- Encryption is key to **Data Integrity**.
- Blockchain helps in **applications** with **no trust in networks**.
- **Crypto Currencies** are on the rise.

What is a characteristic of smart contract?



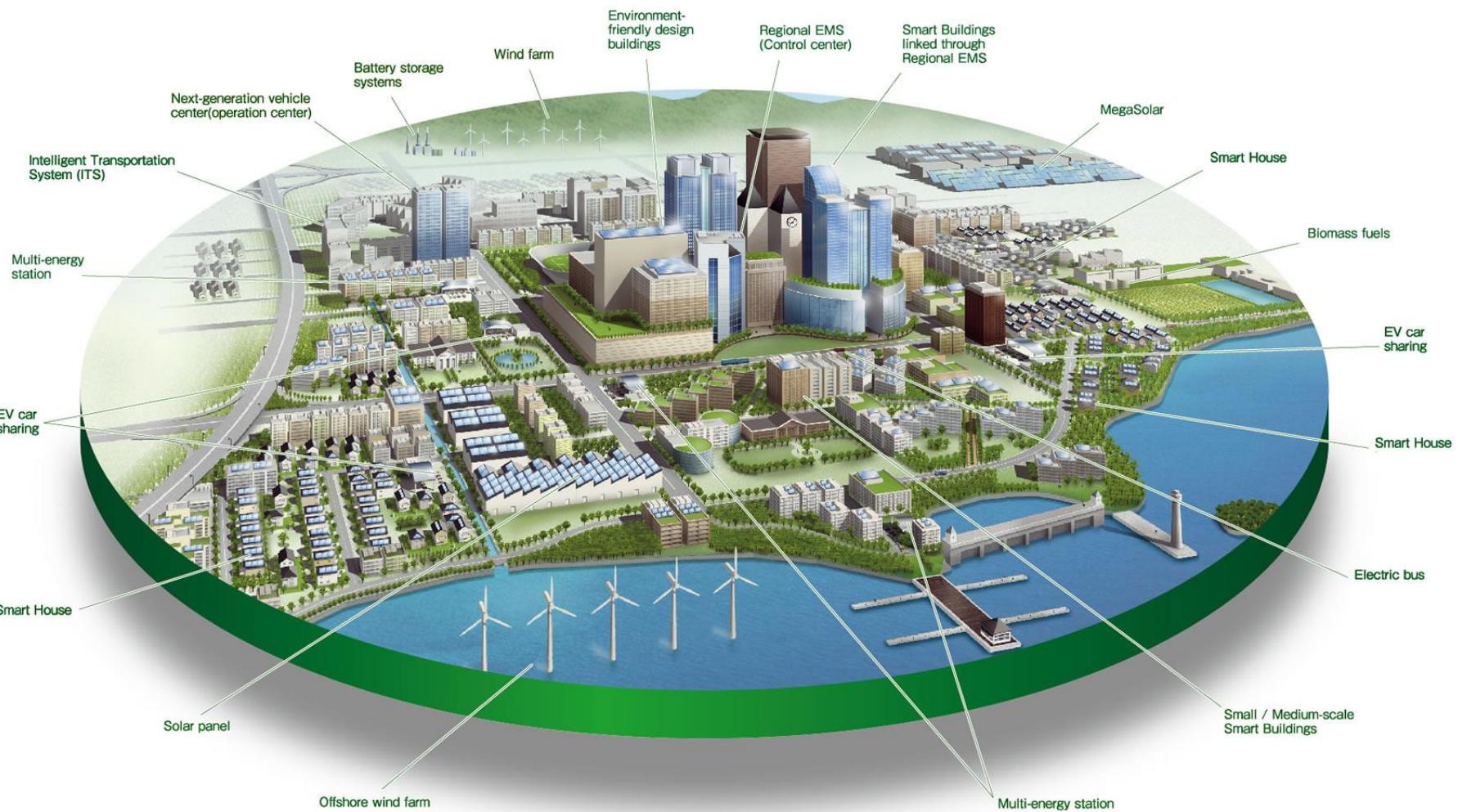
- a) Involved parties remain anonymous.
- b) A contract is created by more than two parties.
- c) The contract is stored on a private ledger.
- d) There is no triggering event set (i.e. deadlines) for the smart contract.
- e) All

What technology is used in libelium – smart parking?

Schwierigkeitsgrad	Art des Wissens	
	Abfragewissen (Vorlesung)	Anwendungswissen (Literatur)
Einfach	Green	Yellow
Mittel	Yellow	Red
Schwierig	Red	Red

- a) Blockchain
- b) Smart contract
- c) Radar sensor
- d) Digital signature
- e) Biometrics

Smart Cities & Smart City Concepts

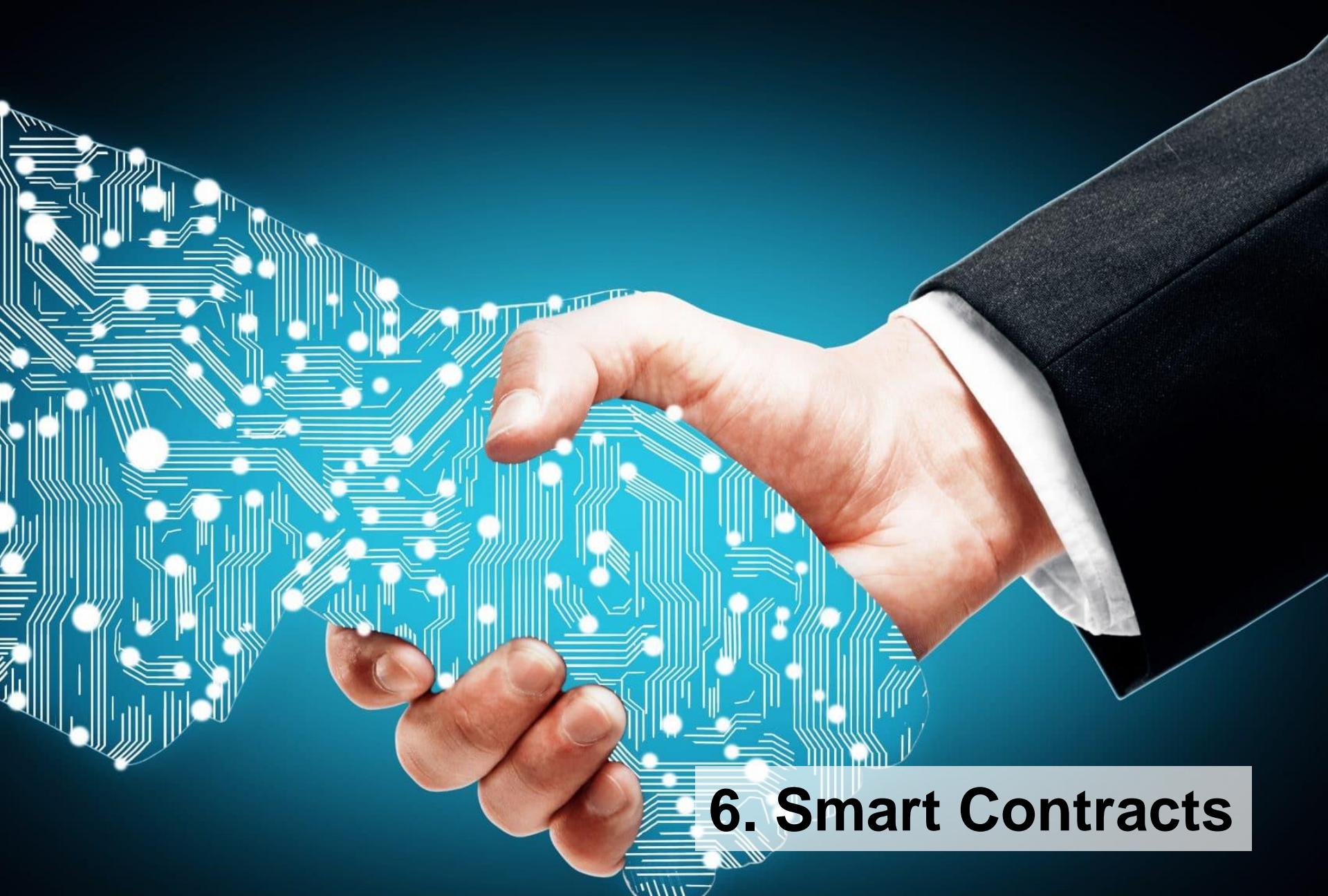


Michael Amberg

Todays Content:

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6. Smart Contracts

Smart contract



From Wikipedia, the free encyclopedia



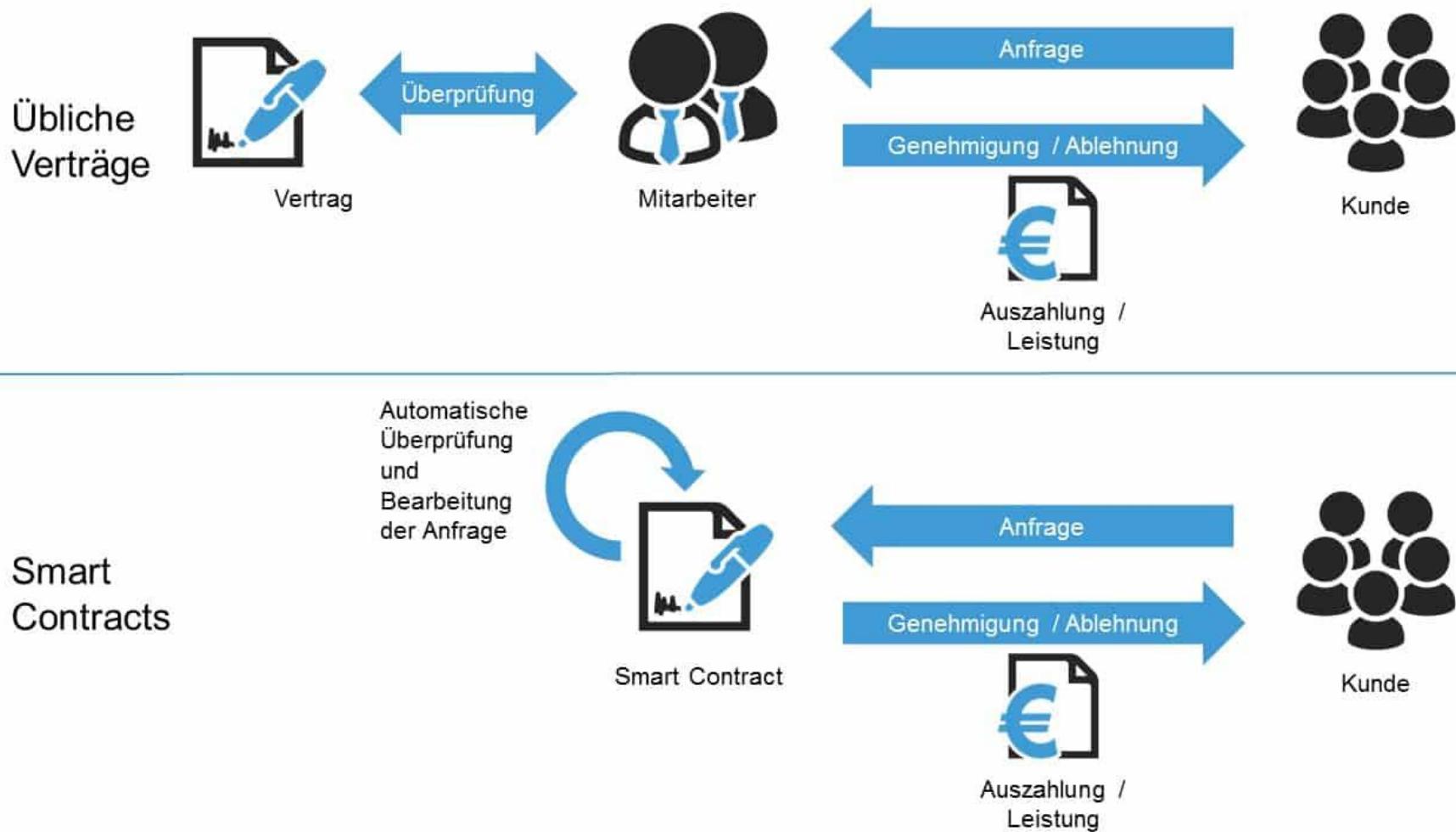
This article has multiple issues. Please help [improve it](#) or discuss these [\[hide\]](#) issues on the [talk page](#). (*Learn how and when to remove these template messages*)

- This article **possibly contains original research.** (December 2016)
- This article's **factual accuracy is disputed.** (August 2019)

A **smart contract** is a [computer program](#) or a [transaction protocol](#) which is intended to automatically execute, control or document legally relevant events and actions according to the terms of a [contract](#) or an agreement.^{[1][2][3][4]} The objectives of smart contracts are the reduction of need in trusted intermediaries, arbitrations and enforcement costs, fraud losses, as well as the reduction of malicious and accidental exceptions.^{[5][2]}

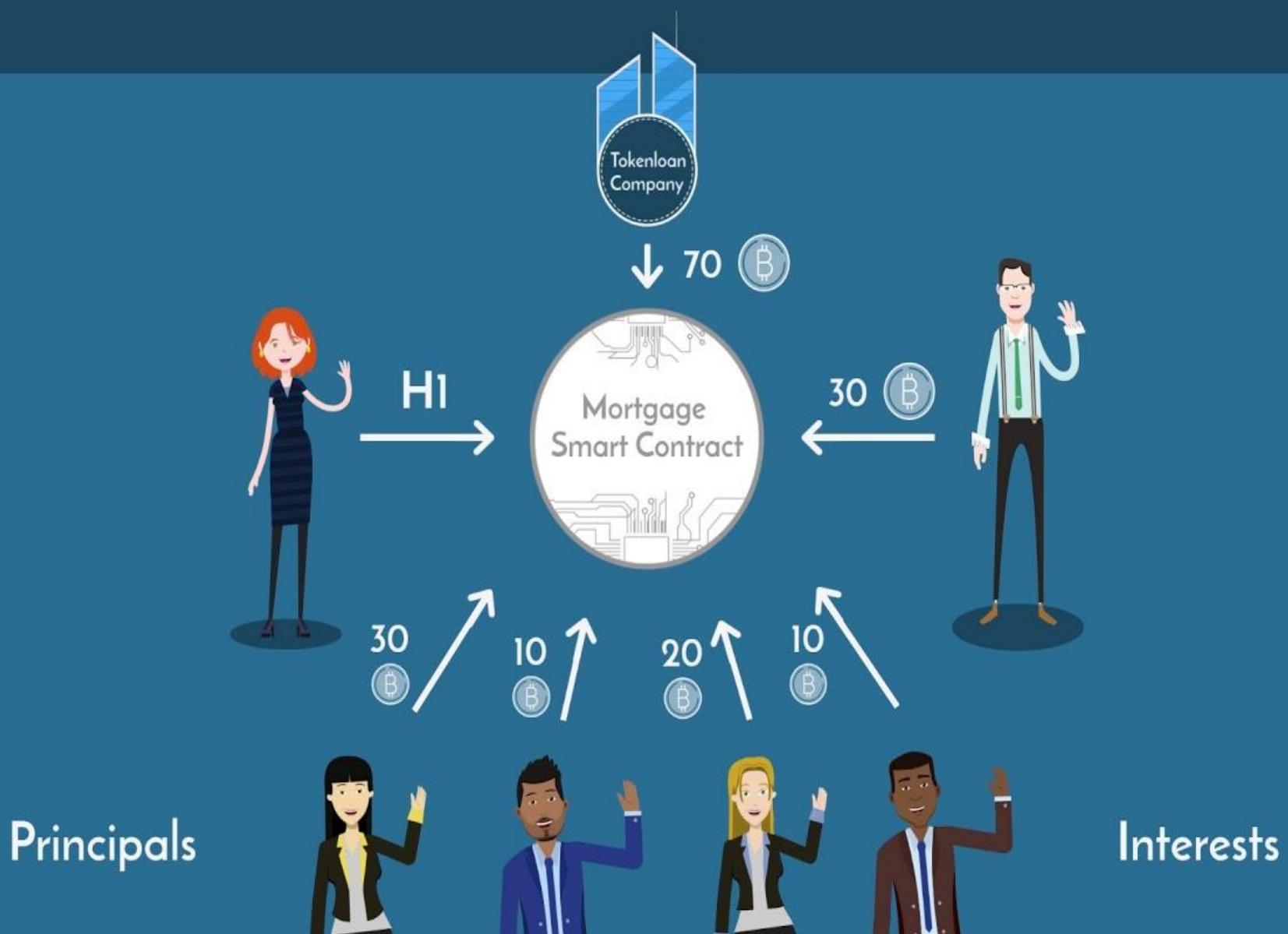
Vending machines are mentioned as the oldest piece of technology equivalent to smart contract implementation.^[3] 2014's [white paper](#) about the [cryptocurrency Ethereum](#)^[6] describes the [Bitcoin protocol](#) as a weak version of the smart contract concept as defined by computer scientist, lawyer and cryptographer [Nick Szabo](#). Since Ethereum, various cryptocurrencies support scripting languages which allow for more advanced smart contracts between untrusted parties.^[7] Smart contracts should be distinguished from [smart legal contracts](#). The latter refers to a traditional natural language legally-binding agreement which has certain terms expressed and implemented in machine-readable code.^{[8][9][10]}

Smart Contracts wurden mit Ethereum eingeführt



Entsprechende Anwendungen können mit Ethereum umgesetzt werden.

Smart Contracts am Beispiel Hauskauf



Smart Contract Explained



- ✓ A contract is created between two parties
- ✓ Both parties remain anonymous
- ✓ The contract is stored on a public ledger

- ✓ Some triggering events are set i.e. deadlines
- ✓ The contract self-executes as per written codes

- ✓ Regulators and users can analyze all the activities.
- ✓ Predict market uncertainties and trends

Smart City Systeme eignen sich für...

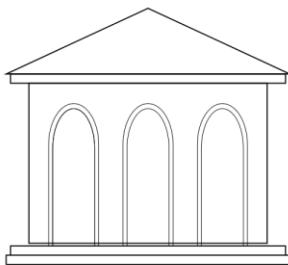


Schwierigkeitsgrad	Art des Wissens	
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Schwierig	Red	Red

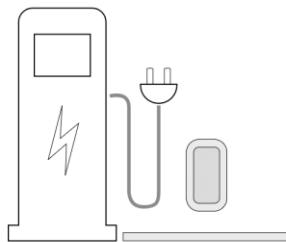
- a) Universitäten
- b) Hotels
- c) Flughäfen
- d) Einzelhändler
- e) Alle

Smart City System

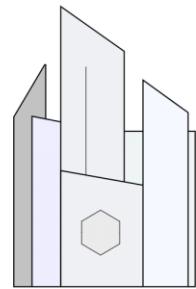
Suitable for:



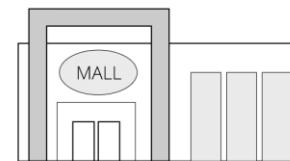
Cities



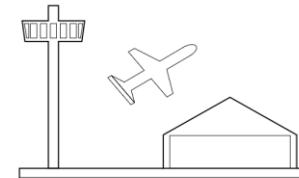
E-Chargers



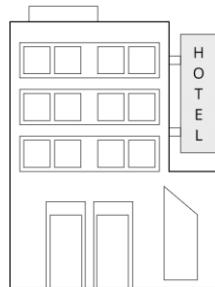
Companies



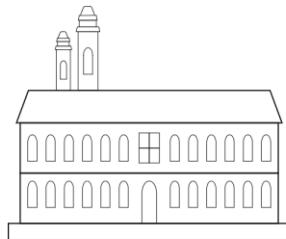
Retailers



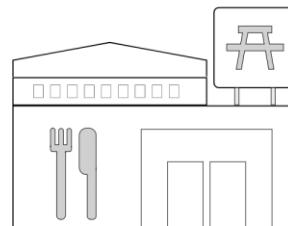
Airports



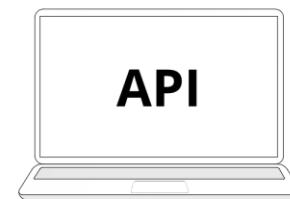
Hotels



Universities



Rest areas



Software developers



Your project

Smart City System



Smart City System



Was ist eine Technologie?

Technologie = **Wissenschaft** von der **Technik**
= **Lehre** von den **Verfahren** zur **Herstellung**
von **technischen Systemen**



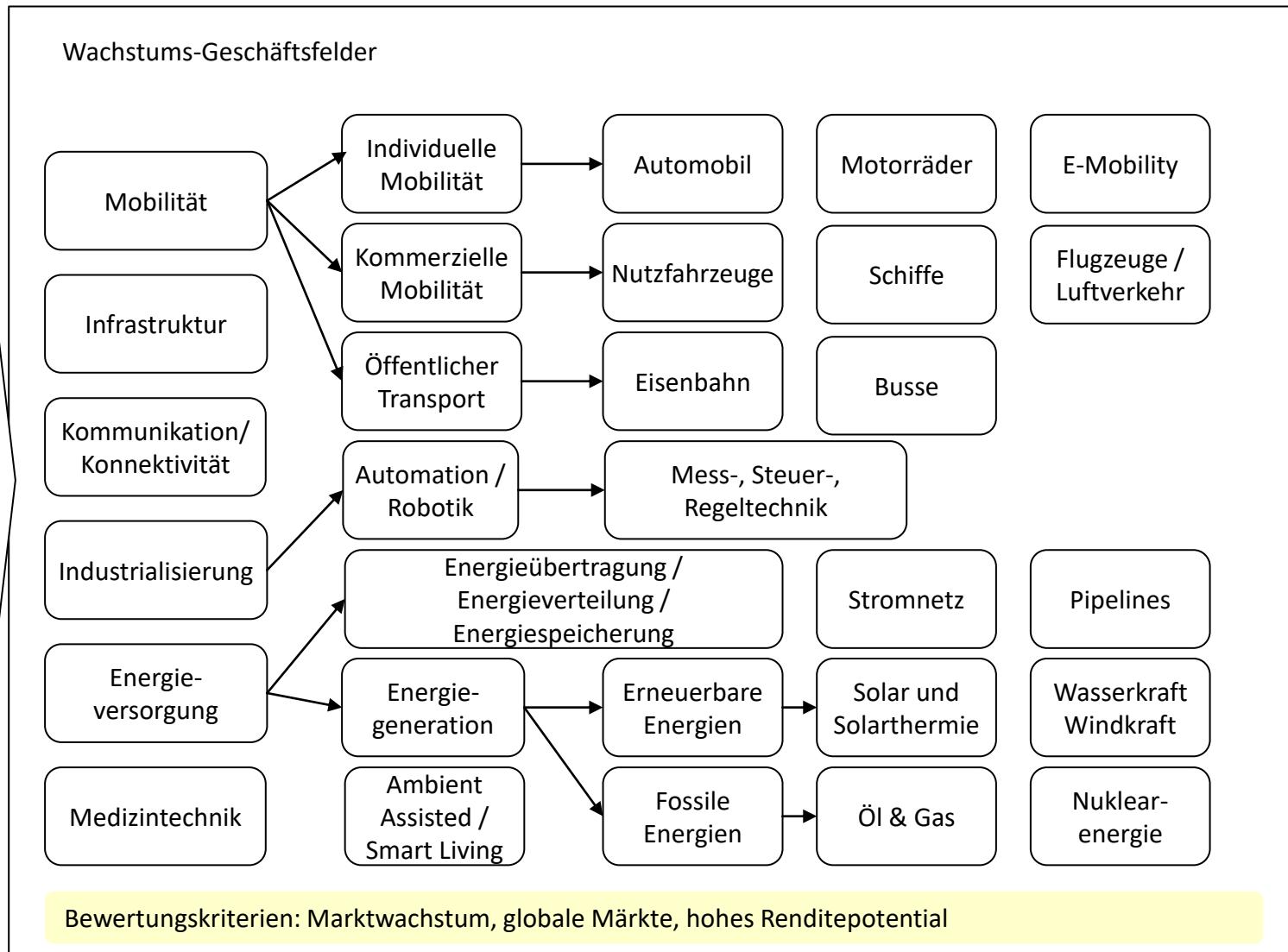
Technisches System:
Auto



Technisches System:
Smartphone

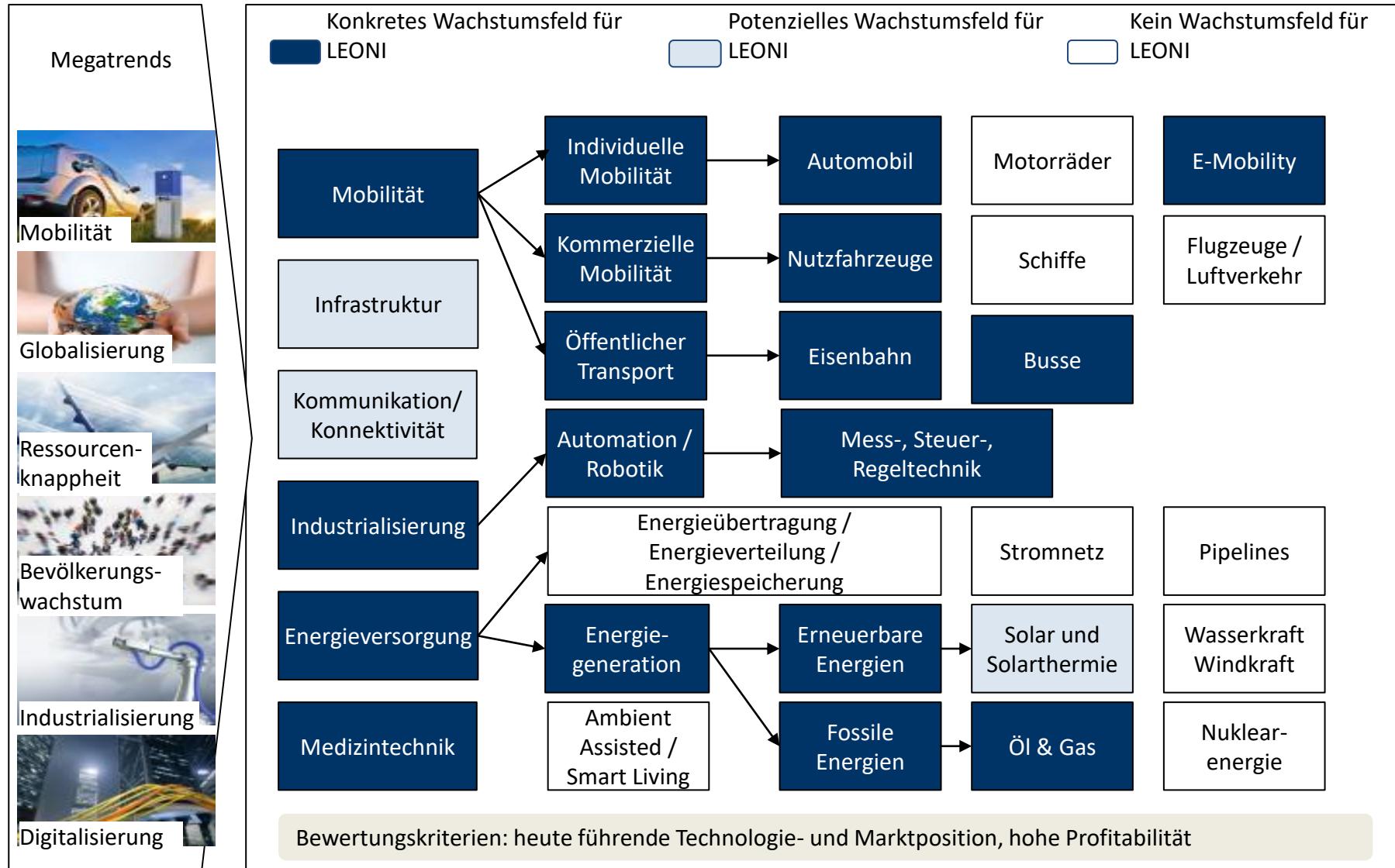
Beispiel Leoni AG:

Schritt 2 · Ableitung von Geschäftsfeldern mit hohem Wachstumspotenzial



Beispiel Leoni AG:

Schritt 3 · Auswahl der Geschäftsfelder mit den höchsten Erfolgsaussichten



PROJECTS

All projects

In development

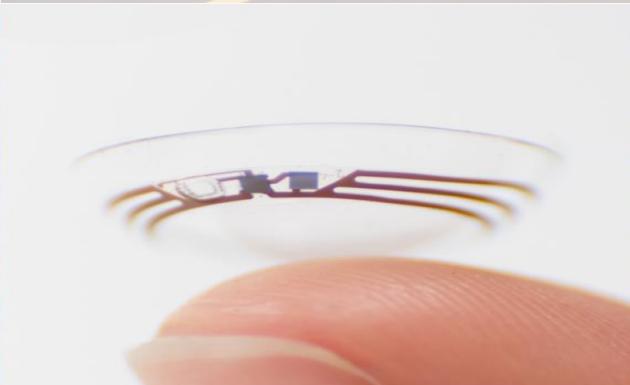
Graduated

Discontinued



Self-Driving Cars

Delivery Drones



Internet Balloons

Smart Contact Lenses

Smart Glasses



Energy Kites

Salt-Based Energy Storage

Seawater Fuel



**Gründung 1967 -
Verpasste den Sprung zum
Smartphone**