



Blockchain—Have we survived the hype?

Discussion Paper



VIENNA, MAY 2019

Bitcoin and the resulting development of the cryptocurrency market is based on three original ideas

Origins of cryptocurrencies

CRITICISM OF BANKS

COSTS

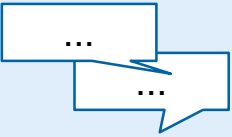
Excessive costs due to intermediaries prevent micropayments

ANONYMITY

Lack of privacy in dealings with banks

TRUST

Too much trust in (central) banks and their functions required



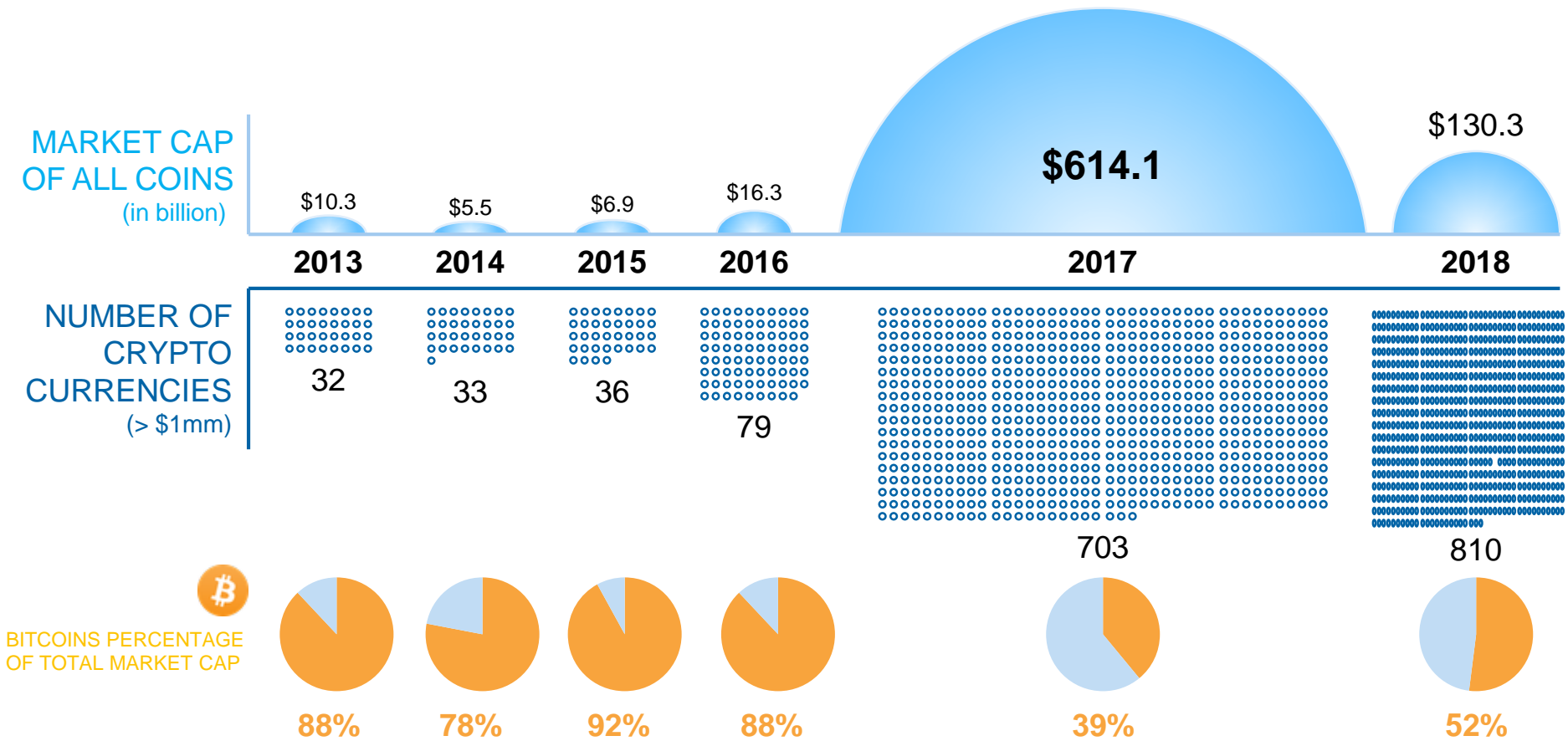
CRYPTOCURRENCIES AS A SOLUTION



... Bitcoins were supposed to replace banks' functions, reduce costs and create anonymity

The development of their number and market capitalization over the past few years demonstrates the importance of cryptocurrencies

Past development¹⁾²⁾



i Worldwide, only 166 official currencies exist and the money supply in Euros is EUR 12,200 billion (M3 money supply)

1) <https://coinmarketcap.com/>; 2) As of last Sunday in December

Lack of consistent regulation, cases of abuse and high volatility result in hesitant take-up

Challenges for cryptocurrencies

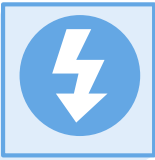
ACCEPTANCE

- Number of companies that accept cryptocurrencies is **on the rise, but still low**



CRIME

- **Illegal transactions**
- **Cryptocurrency theft**



FLUCTUATIONS IN VALUE

- **High volatility**
Fluctuations in value between +780% and -88% within 30-day-periods for Bitcoins



REGULATION

- **No globally consistent regulation of cryptocurrencies**



RESOURCES

- **Enormous energy consumption** (It is estimated that Bitcoin mining requires more power per year than Denmark)¹⁾



SOFTWARE ERRORS

- Example 1: creation of BTC 184 billion
- Example 2: USD 300 million lost in the ether



1) Warum der Bitcoin-Boom die globale Energiewende bedroht (Why the Bitcoin boom threatens the shift to sustainable energy; article in Der Spiegel, Dec 07, 2017)

Large number of startups in the field of Blockchain and cryptocurrencies— significant investments into technology and coins

Current development

COMPANIES

163
blockchain
startups in
Germany¹⁾

- **79 startups** in Germany in connection with **cryptocurrencies**
- **52 startups** build their ideas on Blockchain
- **China** has about **4,000**, the **USA** about **800** companies in connection with blockchain / cryptocurrencies

INVESTMENT

- **\$400 million** for Bitmain (hardware / pool operator) was the biggest VC deal in this field in 2018²⁾
- **Approx. EUR 18 billion** in ICOs³⁾ in 2018
- **70%** of tokens are worth less than at the time of their ICO
- More than **50%** of all tokens have lost nearly 90% of their value compared to their all-time high


approx.
USD 3.9 bn
VC
blockchain/
crypto-
currency

Cryptocurrencies are the most common use case of Blockchains, their opportunity-risk ratio however is hard to estimate due to high volatility

1) <https://www.chain.de/>, as of: Feb 05, 2019; 2) <https://www.btc-echo.de/vor-boersengang-bitmain-erhaelt-400-millionen-us-dollar-in-pre-ipo/>;
3) <https://www.coinschedule.com/stats.html?year=2018>

Ever since cryptocurrencies saw short-term gains in price, the “Blockchain” technology has arrived in popular discourse

Blockchain everywhere!



Digitaler Handel
Die Blockchain-Revolution

Süddeutsche Zeitung
Das ist die Technologie hinter dem Bitcoin-Hype
Die Blockchain ermöglicht nicht nur Kryptowährungen. Sie könnte Banken und Notare ersetzen und den Alltag von Milliarden Menschen verändern.

DER SPIEGEL
Kettenreaktion
Digitalisierung Der Bitcoin-Hype ist vergänglich – was bleibt, ist die Technologie dahinter: Die Blockchain als dezentrale Datentechnik elektrisiert die Industrie. Viele Branchen loten nun die Potenziale aus. Manche arbeiten schon mit eigenen Währungen.

Frankfurter Allgemeine
VOR EINER REVOLUTION?
Erste Handelsfinanzierung über Blockchain geschlossen

FINANCIAL TIMES
Special Report Blockchain
Though best known for underpinning cryptocurrencies like bitcoin, digital ledger technology is also changing sectors like food, healthcare, insurance — as well as the art market

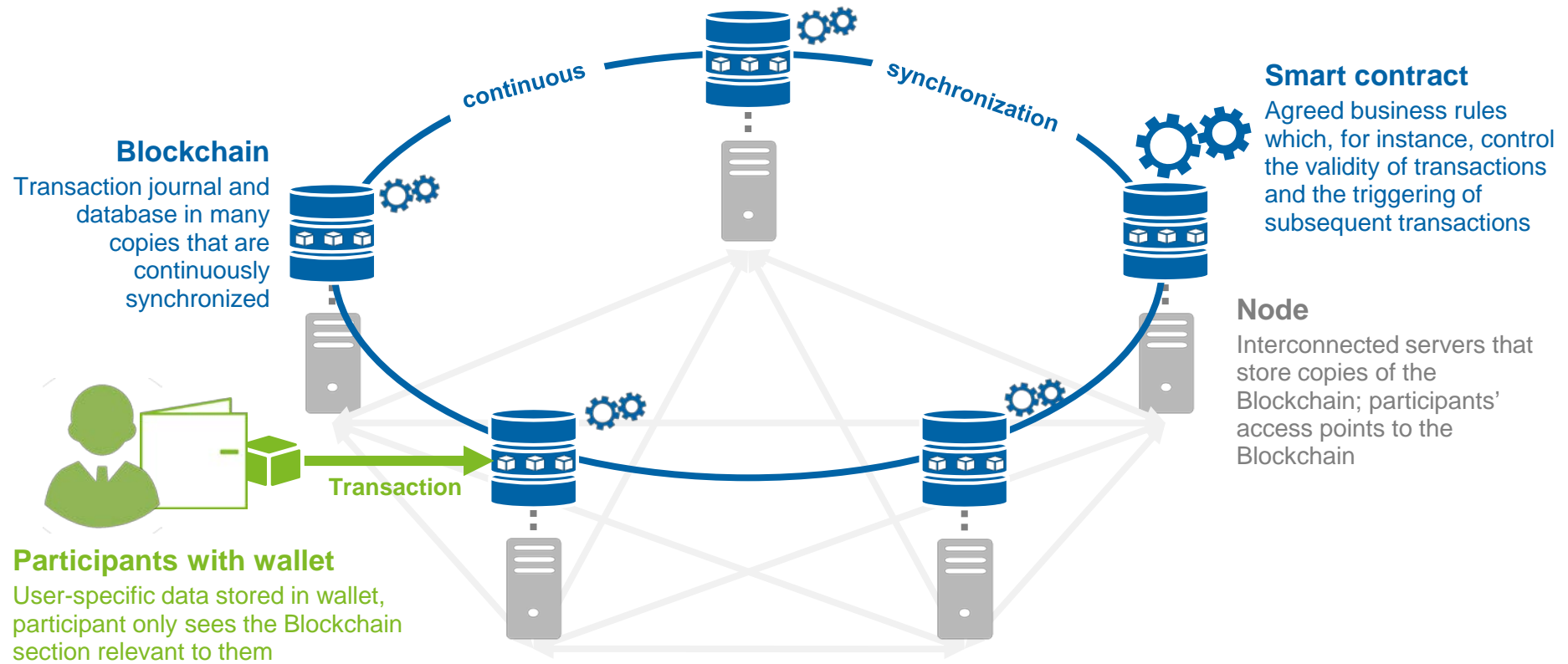
Handelsblatt
Das Blockchain-Manifest – und seine Abgründe
Um zu verstehen, was Bitcoin und Co. so erfolgreich gemacht haben, muss man die Glaubenssätze der Blockchain-Vision kennen – und ihre Abgründe.

Expectations of benefits (estimates)

- Reduction in **infrastructure costs** by **EUR 20 bn p.a.** in banking sector (Santander)
- **Cost reductions** by **EUR 8 bn p.a.** in back-office area of eight major banks (Accenture)
- Positive **income and cost effects** of **USD 80–110 bn** in several product segments of financial institutions (McKinsey)
- **Investments** in Blockchain solutions of **USD 2.1 bn** in 2018 (IDC)

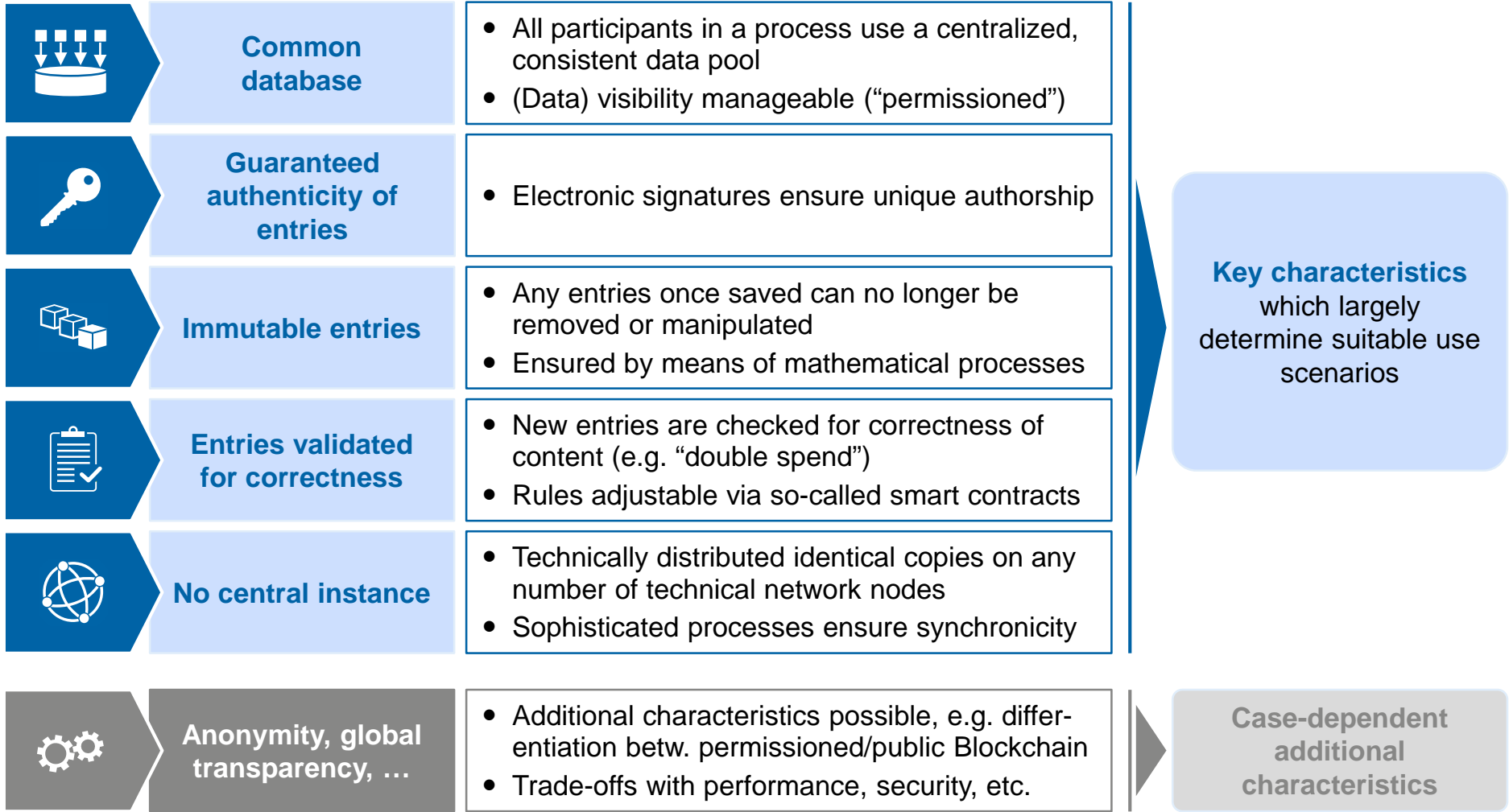
Blockchain is a transaction journal and available in many copies – smart contracts incorporate the business logic underlying the transactions

Basic concept of Blockchain



The key characteristics of a blockchain allow us to solve a large variety of issues in a more efficient manner

Explanation of DLT



Only for processes that fulfill certain criteria can the use of DLT be a sensible and effective solution

Usage criteria



Distributed ledger solutions **especially well** suited when ...

Distributed ledger solutions **less** suitable when ...



several parties participate in business transaction(s) – even with long time intervals

there is only one **using party** or a **stable group** of few participants over a long period of time



no trustworthy, independent and central instance feasible or desired for setup and operation of a central transaction evidence

trustworthy central instance already established and working both effectively and efficiently—acknowledged by all parties



parties are organized in **networks**—explicit confirmations required for contractual or regulatory reasons

low latency or **guaranteed processing times** required



Peer-to-peer automation of business processes with many participants in B2B and B2C segment

Traditional process automation with less technical complexity than distributed ledger

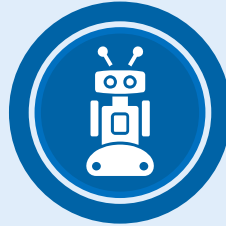
The advantages of Blockchain applications become most apparent in cross-sector scenarios

Use cases



SAFE ORIGINS

- Digital identity and ID systems
- 2** Know-Your-Customer and client onboarding
- Tracking works of art
- Digital land register
- ...



PROCESS AUTOMATION

- 1** Trade finance (LC)
- 3** Securities settlement
- 4** Settlement of OTC derivatives
 - International payment transactions
 - ...



DIGITAL REPRESENTATION OF CLAIMS

- Crypto-securities (security tokens, STO)
- Digital “currencies” (“coin”, “token”)
- 5** Proxy-voting
 - Loyalty programs
 - ...

Details on following slides

Currently, the development of DLT is mostly visionary and limited to individual cases—medium-term use cases should be aimed for

Outlook

