Deloitte.
Digital

Wie die Blockchain Geschäftsmodelle verändert

Dr Dirk Siegel, Partner and Leader Blockchain Institute

Blockchain Explained

What is Blockchain?

A technology of the dark net

The driver of one of the biggest hypes ever

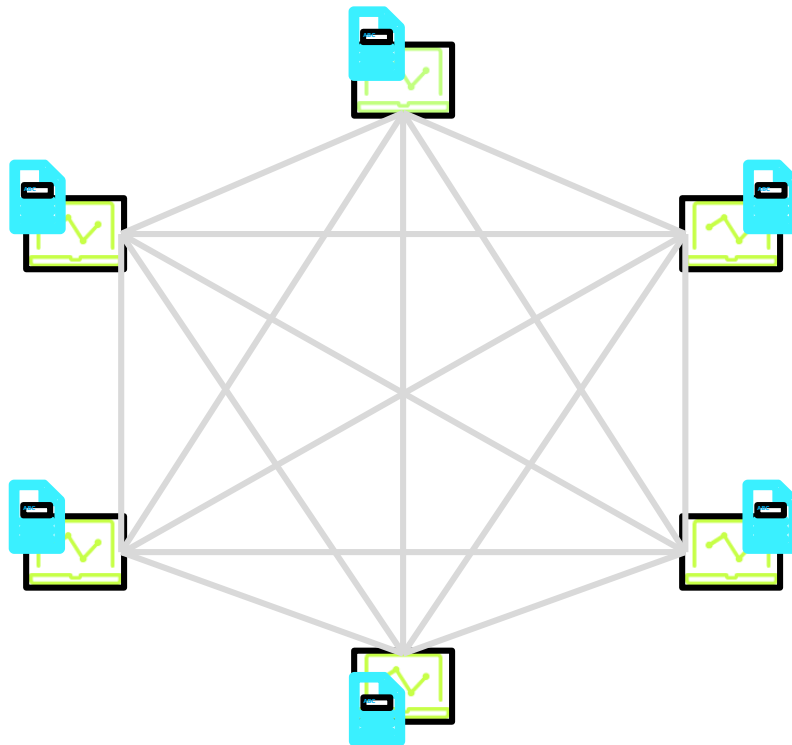**The grim reaper of many established business models**

A challenger to the established economic and social order

Just another technology

Whatever it is – it will not work with current regulation / laws

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This is Blockchain!

Blockchain is a ledger that stores transactions immutably and very securely, due to the redundancy of many nodes

A **network of computers (nodes)**, connected via the Internet, in which users at any one node can receive or send peer to peer:

Value

Identity

Data

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Blockchain properties

11 characteristics

Reliability

🔒 **Always on**

⏻ **No single point of failure**

🏅 **Direct communication, no 3rd party**

🔗 **Sharing data without control overhead**

Connectivity

🌐 **Distributed**

💲 **Transact with anyone**

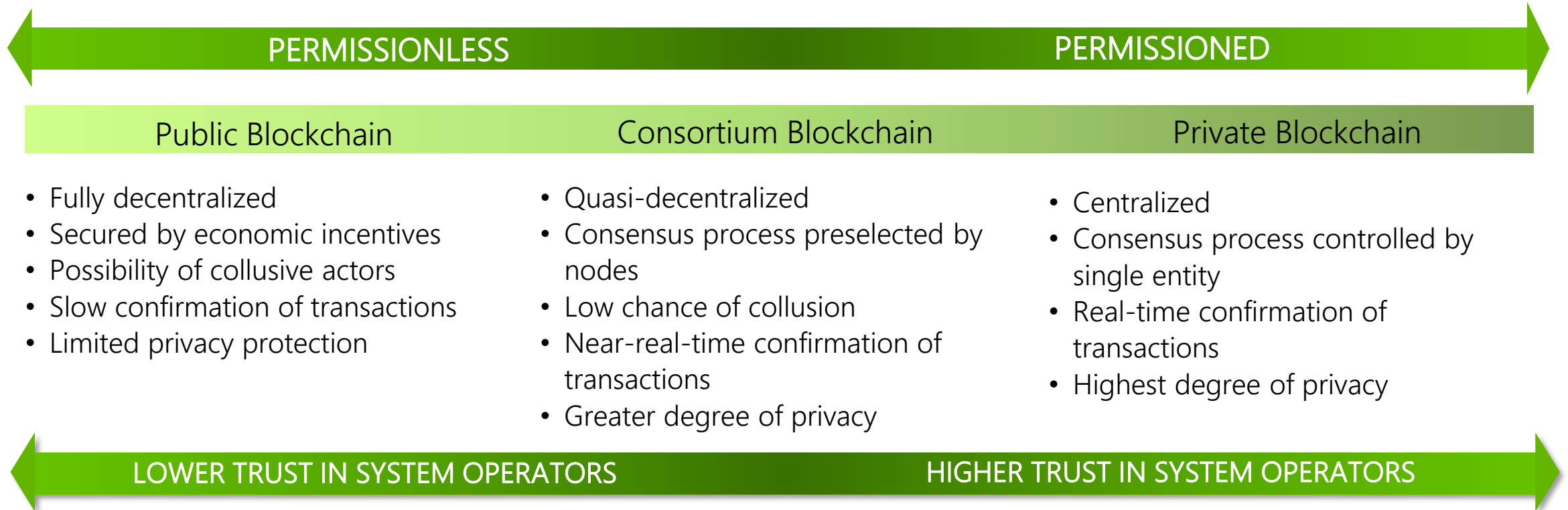💡 **Anyone can innovate**

📍 **Globally accessible**

Security

🔏 **All transactions are digitally signed**

🔒 **Immutable record of events**

🔑 **Can manage ownership**

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Permissionless vs. Permissioned Blockchains

We review the spectrum of network structures and the scale from Permission less to Permissioned

Blockchain network structures:

PERMISSIONLESS →→→ PERMISSIONED

Public Blockchain	Consortium Blockchain	Private Blockchain
• Fully decentralized • Secured by economic incentives • Possibility of collusive actors • Slow confirmation of transactions • Limited privacy protection	• Quasi-decentralized • Consensus process preselected by nodes • Low chance of collusion • Near-real-time confirmation of transactions • Greater degree of privacy	• Centralized • Consensus process controlled by single entity • Real-time confirmation of transactions • Highest degree of privacy

LOWER TRUST IN SYSTEM OPERATORS ←←← →→→ HIGHER TRUST IN SYSTEM OPERATORS

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Established Blockchain Consortia

Blockchain is a platform play, and as a result consortia have been mobilising across all major industries and in the public sector

	Financial Services	Mobility	Energy	Logistics & Supply Chain	Telco	Public Services
Use Cases	• Trade finance • KYC • Credit scoring • Re-insurance • Anti-fraud	• Data platforms for self-driving vehicles • Multi-modal mobility transactions	• Commodity trading • P2P power sharing • V2G & Electric Vehicle Charging • Renewable power plant funding	• Supply Chain tracking • Proof of provenance • Logistics capacity trading platforms	• User and machine identity (e.g. IoT Device) • Roaming settlement • Fraud prevention	• Digital identity • Personal records (e.g. health records) • Land registry
Initiatives & Players	Bank of America, Nordea, ACORD, RBS, UBS, RBC, Hana Financial Group, INTESA SANPAOLO, SMBC Sumitomo Mitsui Banking Corporation, SBI Holdings, BMO Financial Group, Danske Bank, MIZUHO, BNP Paribas, ING, Wells Fargo, SOCIETE GENERALE, BBVA, BARCLAYS, Commonwealth Bank, Deutsche Bank, Westpac, citi, THOMSON REUTERS, HSBC, MUFG, TD Bank, J.P. Morgan, BNY MELLON, Scotiabank, CREDIT SUISSE	DAIMLER, MOBI, BMW, AIRBUS, TOYOTA, VOLKSWAGEN FINANCIAL SERVICES AKTIENGESELLSCHAFT	RWE, Shell, innogy, Elaadnl, energy web, Fortum	IBM, UPS, BASF We create chemistry, DHL, MAERSK	NTT, Telekom Innovation Laboratories, T··, vodafone, IBM	LANTMÄTERIET, BenBen, MAS Monetary Authority of Singapore
Example consortia	we.trade more trust. more trade., r3., The Institutes RiskBlock Alliance, B3i, MAMA Multichain Asset Managers Association	M O B I	energy web, ener chain, AKT	TRADELENS, BiTA BLOCKCHAIN IN TRANSPORT ALLIANCE	Carrier Blockchain Study Group	CLIMATE CHAIN COALITION

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THREE AREAS OF DISRUPTION

Three areas of disruption

Ecosystem Blockchains
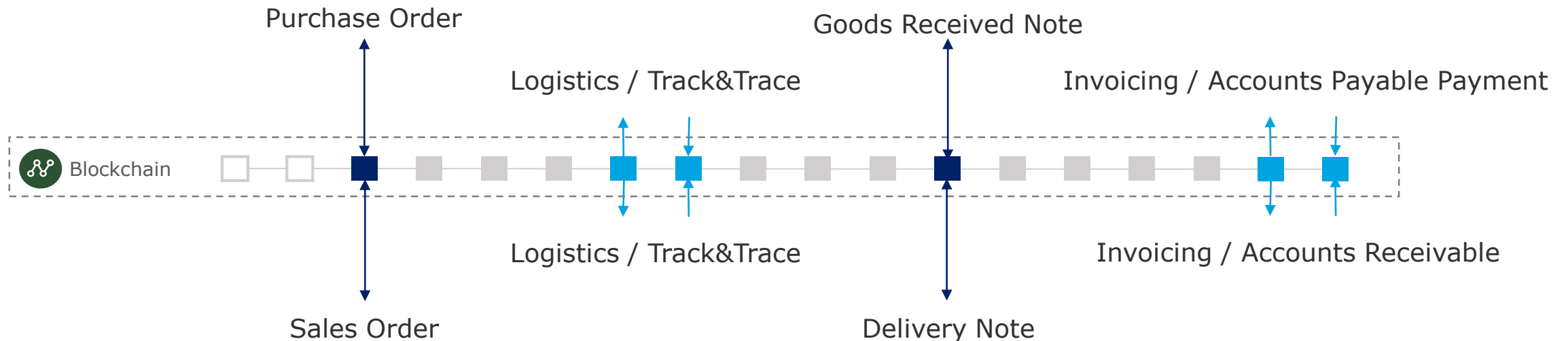
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Ecosystem Blockchains

Ecosystem Blockchains have the potential of becoming the cross-enterprise ERP-systems of the future

Example: Supply Chain / Procure-to-Pay Process

Buyer

Purchase Order

Goods Received Note

Logistics / Track&Trace

Invoicing / Accounts Payable Payment

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Logistics / Track&Trace

Invoicing / Accounts Receivable

Sales Order

Delivery Note

Seller

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Three areas of disruption

Ecosystem Blockchains

Blockchain & IoT

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Blockchain & IoT

"Blockchain-like" technology can be the documentation and payment layer of the IoT
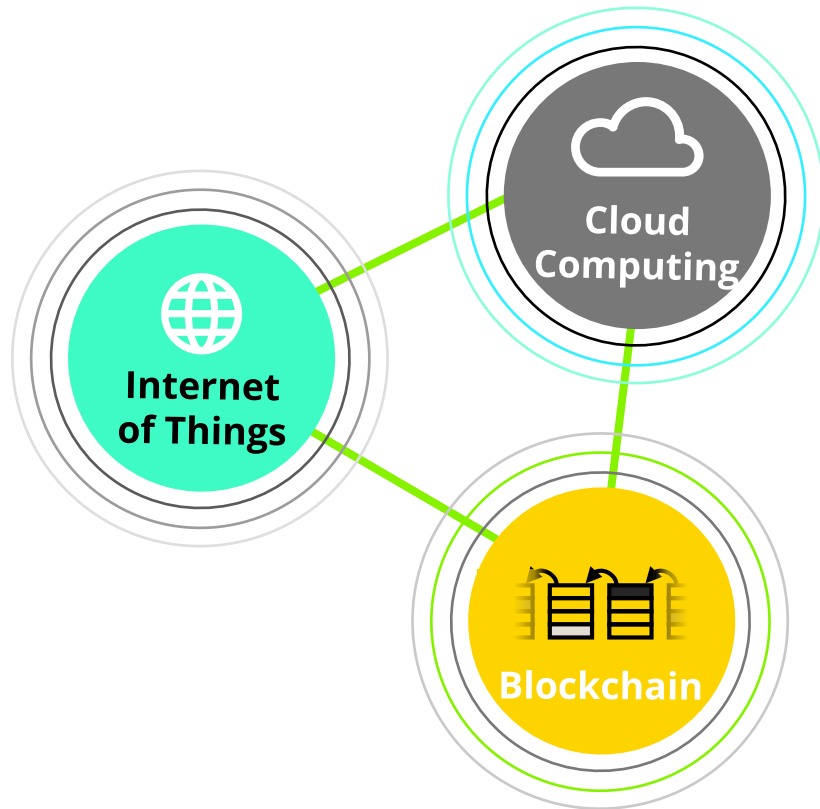
IoT / Machine Economy
Machines act independently as autonomous economical systems

Role of Blockchain technology
- Documentation layer
  what happened?
- Identification layer
  who did it?
- Payment layer
  who owes money to whom?

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Blockchain, IoT & Cloud

Total connectivity

- Digital Twins complement real-time end-to-end traceability
- All data concerning the physical asset is stored in the Digital Twin
- Easy monitoring and problem fixing

Unlimited scalability and flexibility

- Platforms using Microservices are designed for horizontal scaling
- Can quickly adjust to business disruptions through rapid development
- Analytics can be integrated easily
- Cope with big volumes of data - managing millions of Digital Twins

Total trust and transparency

- The distributed ledger ensures security
- Breaks through information barriers of a single enterprise while protecting Digital Twins from unauthorized access

Cloud Computing

Internet of Things

Blockchain

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Three areas of disruption

Ecosystem Blockchains

Blockchain & IoT

Asset Tokenization

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Asset Tokenisation

Assets can be brought onto a Blockchain and traded with the same ease and speed as cryptocurrencies

- **Access to global investor community**
- **Increased liquidity**
- **Reduced barriers of entry for both buy and sell side**
- **Security**
- **High level of transparency enabling active participation by owners**

Asset Tokenisation

There are many fundamentally different token models

Model	Example	Comments
Pure Cryptocurrency	Bitcoin	established
ICO	...	No investor protection – mostly dead
Currency Backed Token	Tether	Token that can be exchanged for underlying at any time
Currency Backed Token ++	Libra	Powerful consortium issuing token backed by currency basket
Token backed by other Assets: Commodities, Reals Estate, Equity, Debt, Working Capital etc.	DGX	Could inject massive amounts of liquidity into classical production companies
Fiat Currency on Blockchain	Planned: Yuan, e-Korona	Actual issuance of Fiat currency on the blockchain by central bank
Securities on Blockchain	SDX	Will become the new paradigm of trading securities t+0

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Asset Tokenisation

Remarks on legal framework and regulation

Legal Framework is being created

➢ CH: Bundesgesetz zur Anpassung des Bundesrechts an Entwicklungen der Technik verteilter elektronischer Register
➢ Li: VTG
➢ D: Cryptoassets -> KWG; Implementation of the 5th EU Anti-Money Laundering Directive

General Principles

➢ Legal content more important than technical implementation
➢ No new rights / entitlements created by a token
➢ A token seen as a "pointer" to an existing right

Expected Consequences

➢ Although no new rights are created the very flexible, fast, cheap and safe transaction mechanisms will open new areas to the capital markets by creating more transparency and liquidity

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Three areas of disruption

**Ecosystem
Blockchains**

**Blockchain &
IoT**

**Asset
Tokenization**

Making ecosystems as efficient
as integrated enterprises

Making IoT safe, operational
and economically viable

Challenging banks; lowering the
barriers to the capital markets

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Relevanz für Sanierung

Geschäftsmodelle

➢Neue Geschäftsmodelle / neue Umsatzquellen

➢Konsortien / Ökosysteme / Netzwerke

Tokenisierung

➢Verbesserung der Bilanzstruktur durch Liquidierung von Assets

➢Erleichterung des Zugangs zu Kapitalmarkt

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Outlook and Challenges

Blockchain Vision & The Current State

Exploration of Blockchain has mostly focused on B2B processes and operational improvements - but this is just the tip of the iceberg!

We believe that Blockchain will...

... reshape the fabric of industry, by turning entire processes inside-out and allowing market participants to share currently unproductive infrastructure costs.

... trigger the advent of new products, services, and business models, by truly empowering users and enabling unprecedented customer-centricity.

... constitute a cultural paradigm shift, allowing us to move from today's sharing economy to a definitive "trust democratization" for the common good.

Key Challenges

Technical Progress

Standards are advancing (e.g. Hyperledger, ISO/TC 307 and Ethereum Enterprise Alliance) for public and private Blockchains, especially over scalability, privacy and security.

Regulations

Authorities initially adapted a wait and see approach, but many are now beginning to engage with businesses and technology stakeholders.

Legal Enforceability

... is still at an early stage with special focus on e-signature acceptance and the true court value of smart contracts - but things are moving fast.

Social Acceptance

This new paradigm is starting to become widespread with cryptocurrencies and public Blockchains gaining more attention by the public from day to day.

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"The electric light did not come from the continuous improvement of candles"

OREN HARARI | USF