Blockchain – The universal remedy for Supply Chain transparency?

6-7 February 2018 | Frankfurt, Germany

Bob Braverman, Executive Director, Consulting and Advisory Services,
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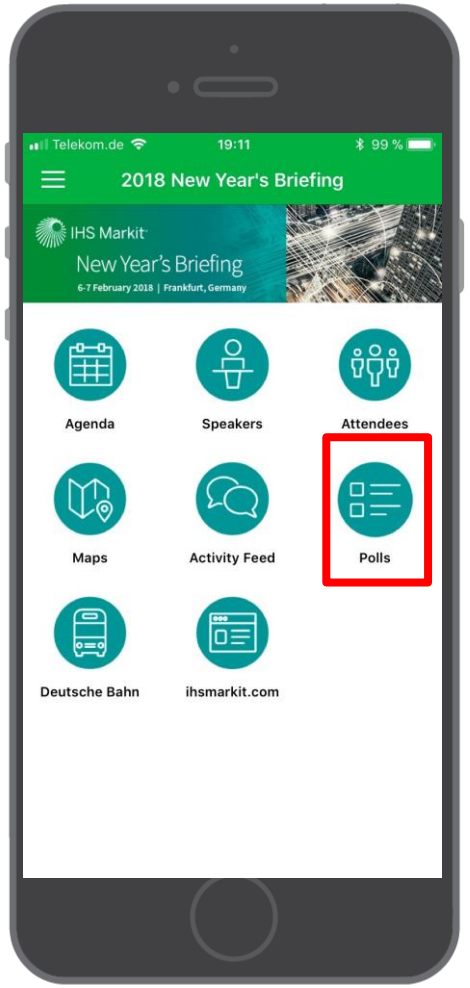
POLL QUESTION!



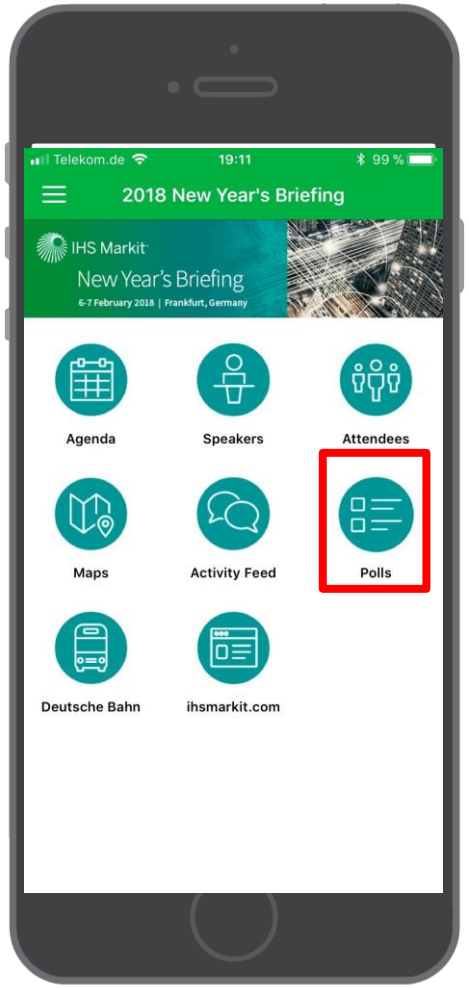
How many times during this conference have you heard the word Blockchain?

- ☐ Less than 5
- ☐ Between 6 and 10
- ☐ Between 11 and 20
- ☐ More than 20
- ☐ Too many to count

Access this poll on the event app!

https://api.cvent.com/polling/v1/api/polls/sp-c80p26

POLL QUESTION!



Can Blockchain improve security and alleviate privacy concerns?

- ☐ Do you use a smart watch or fitness tracker?
- ☐ Is it connected to your cell phone?
- ☐ Do you upload your activities/exercise to the cloud?
- ☐ Are you sure that the data you upload is secure?
- ☐ Have you considered what risks that may pose?

Access this poll on the event app!

https://api.cvent.com/polling/v1/api/polls/sp-yxr0rm

Supply Chain Visibility: Environmental Compliance, Social Responsibility, Counterfeit Mitigation

Software & Integration

Material Compliance / Conflict Mineral Platform:

Automates sourcing and assessing compliance content from suppliers.

Analyzes and reports against regulations such as REACH, RoHS, Prop 65, Conflict Minerals, Human Trafficking and others.

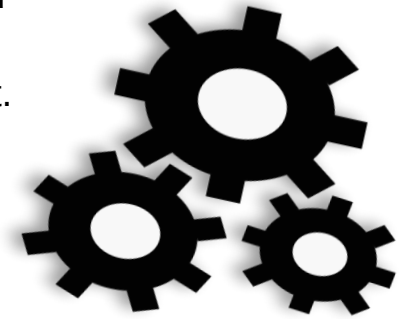
Supports roll-up, due diligence capture and audit support.

Integrates with Client enterprise systems

Consulting

Workshops and Consulting on Product Material Compliance and Conflict Minerals:

Frameworks, Policy and Systems, OECD Guidance, 3 Ring Binder, RCOI, Audits and Filing Assistance, etc.



Content

Maintained Content

IHS CAPS Universe Electronics Database of 500+ million electronic components with technical content, datasheets, authorized suppliers, counterfeit part mitigation and compliance content

Content Sourcing Services

Engage and follow-up with suppliers to obtain content and maximize response rates and quality of responses

May use iPoint's market leading software for content collection, assessment and reporting

Conflict Mineral, RoHS, REACH, Materials of Concern, Human Trafficking

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Is Blockchain the Universal Remedy to Trace Materials and Make Supply Chains transparent?

Joerg Walden

CEO

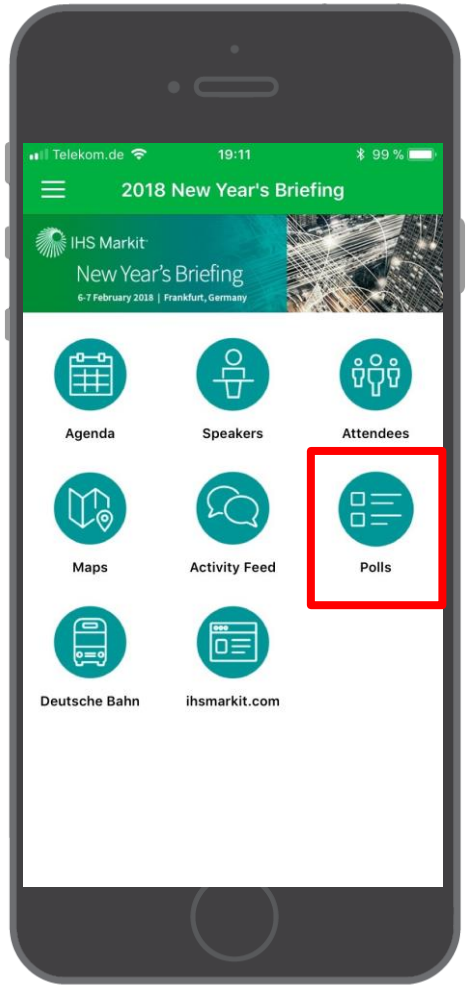
iPoint-systems gmbh

Mauro Isaja

Project Manager, Research and Development

Engineering Group

POLL QUESTION!



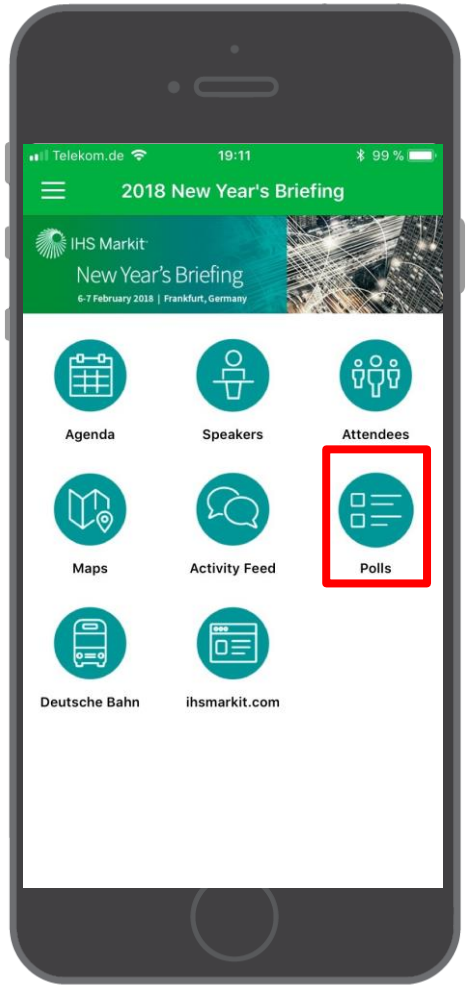
Are you currently using blockchain or thinking of using blockchain in your daily business in the near future?

- ☐ Yes
- ☐ No

Access this poll on the event app!

https://api.cvent.com/polling/v1/api/polls/sp53j2i9

POLL QUESTION!

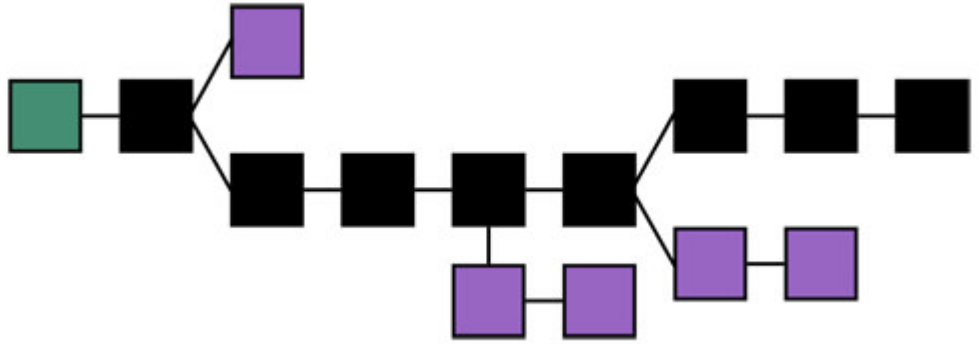


How would you describe your level of blockchain-related knowledge?

- ☐ 1 – No knowledge
- ☐ 2 – Novice (minimal knowledge, limited experience)
- ☐ 3 – Beginner (Working knowledge of key aspects)
- ☐ 4 – Competent (good working and background knowledge)
- ☐ 5 – Proficient (deep understanding & practical experiences)
- ☐ 6 – Expert (recognized authority / using BC in daily business)

Access this poll on the event app!

https://api.cvent.com/polling/v1/api/polls/sp-kh4oh6



Is Blockchain technology ripe for business?

ENGINEERING

Mauro Isaja, Engineering Group, mauro.isaja@eng.it

Some R&D projects I'm personally involved in

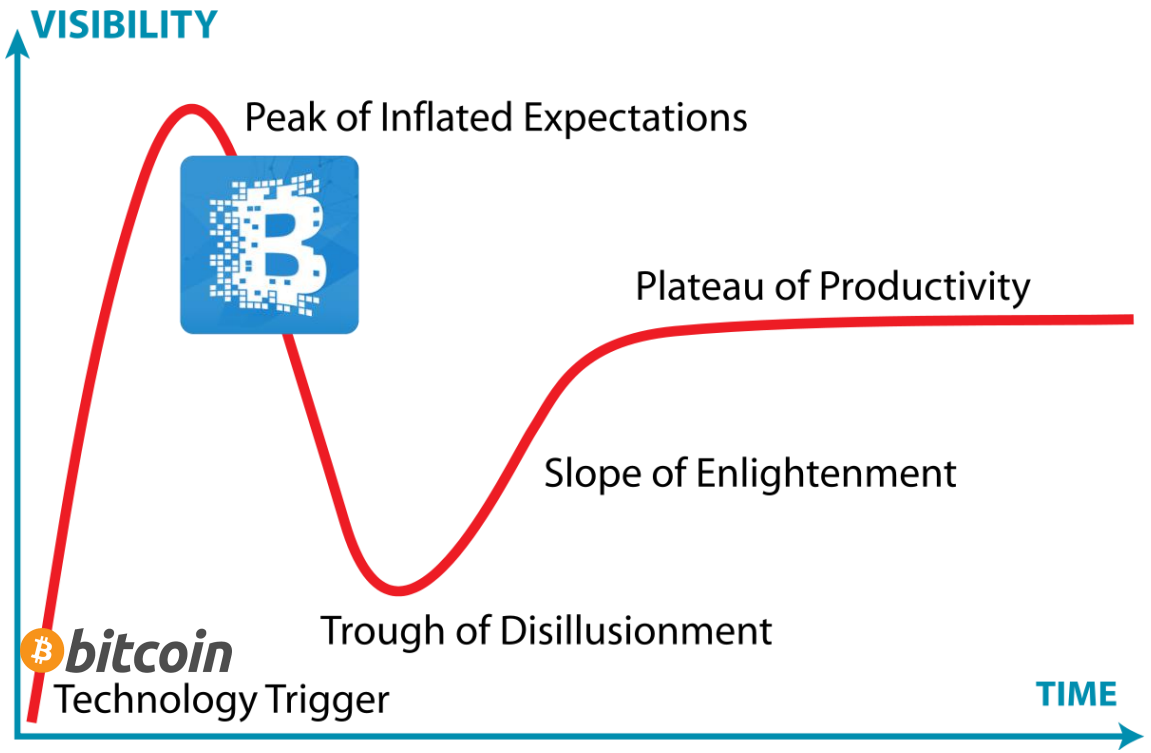
MANUFACTURING: FAR-EDGE

- Blockchain as a key enabler of **factory process decentralization**
- **Autonomous workstations** on the assembly line
- **Digital twin of the product** throughout its entire lifecycle
- In partnership with a major player in the European automotive sector
- http://www.faredge.eu/

ENERGY: eDREAM

- Blockchain for **peer-to-peer management of energy grids**
- Define and enforce negotiated **contracts for load balancing**
- **Notarize** readings from IoT smart meters
- **Settle** contract-related rewards
- http://www.cordis.europa.eu/project/rcn/212892_en.html

The peak of inflated expectations & the trough of disillusionment

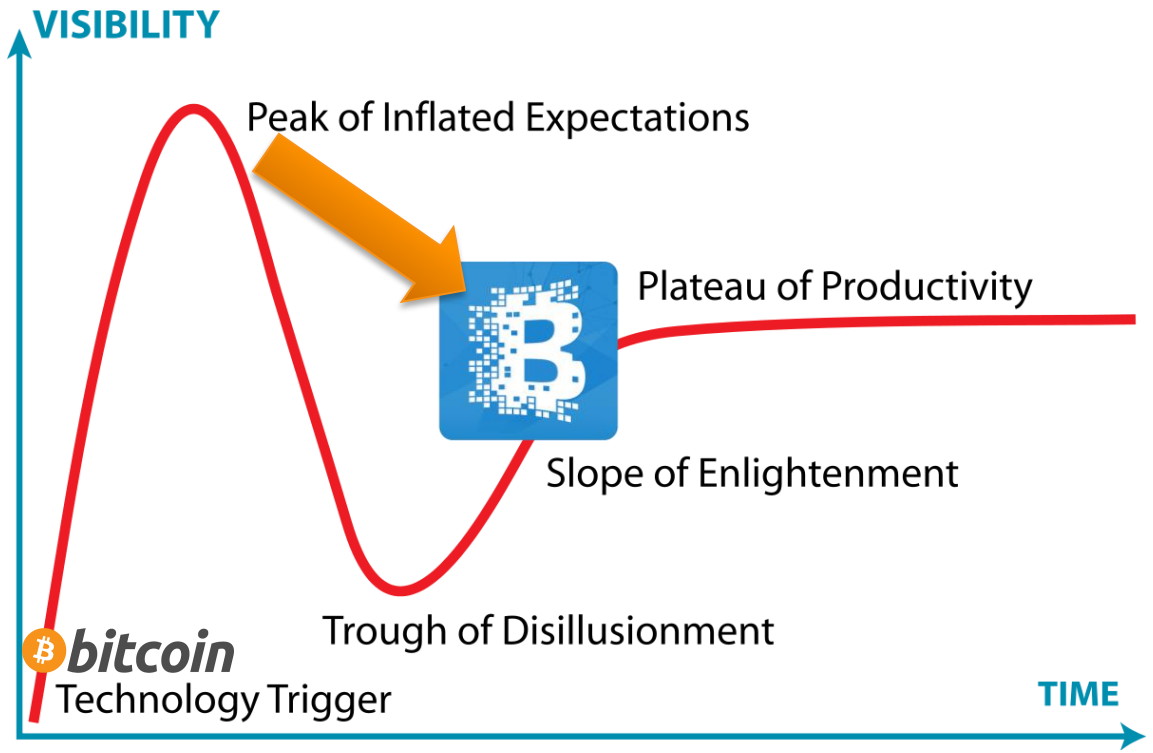


There's a significant amount of **hype** surrounding whatever has the "Blockchain" tag attached

Like with the dot-com bubble, the gold rush will end, but **the world will not be the same any more**

We are still on the wrong side of the trough of disillusionment, due to an *impedance mismatch* between supply (IT scientists & developers) and demand (business users)

Skipping the trough and moving right up to the slope

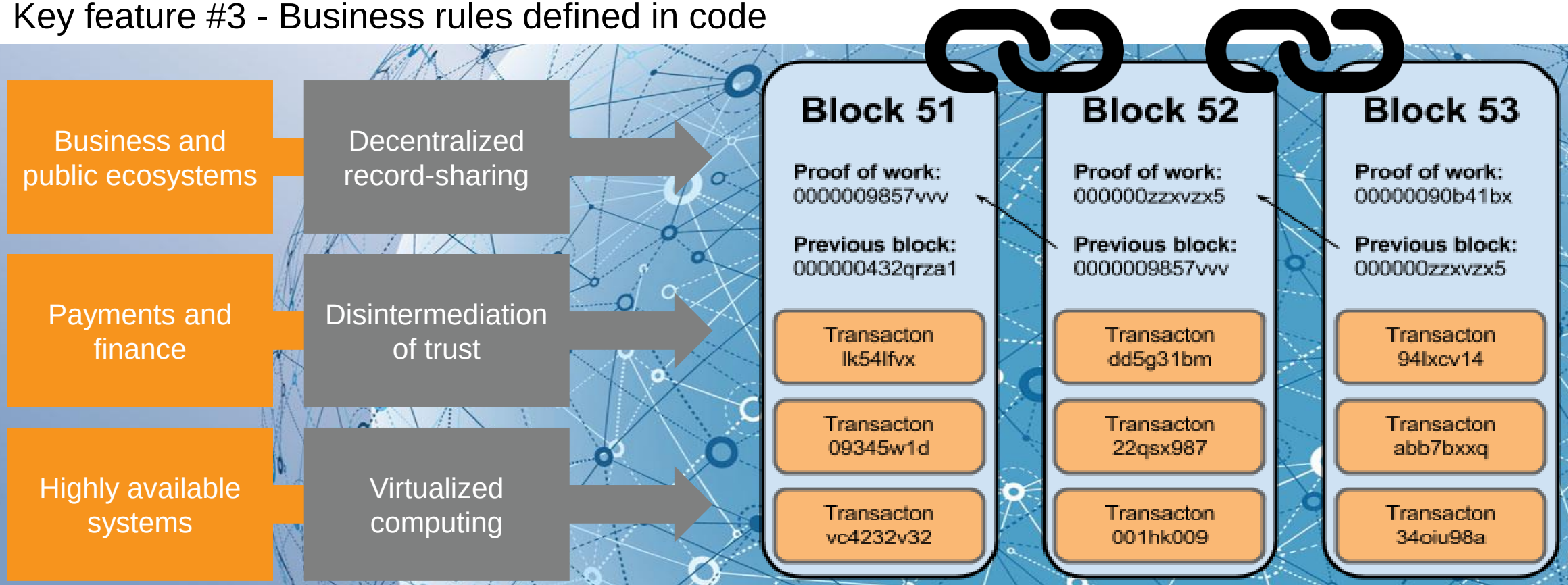


As we speak, developers are just doing their job: refining the technology, removing road blockers, closing the gap between the real thing and the expectations

We don't need to go through disillusionment in order to reach productivity: it's just a matter of synching up the business-oriented vision with the technical roadmap

Blockchain primer 1/3

Key feature #1 - Append-only sequence of immutable and timestamped transactions
Key feature #2 - Transactions approved by consensus on compliance against business rules
Key feature #3 - Business rules defined in code

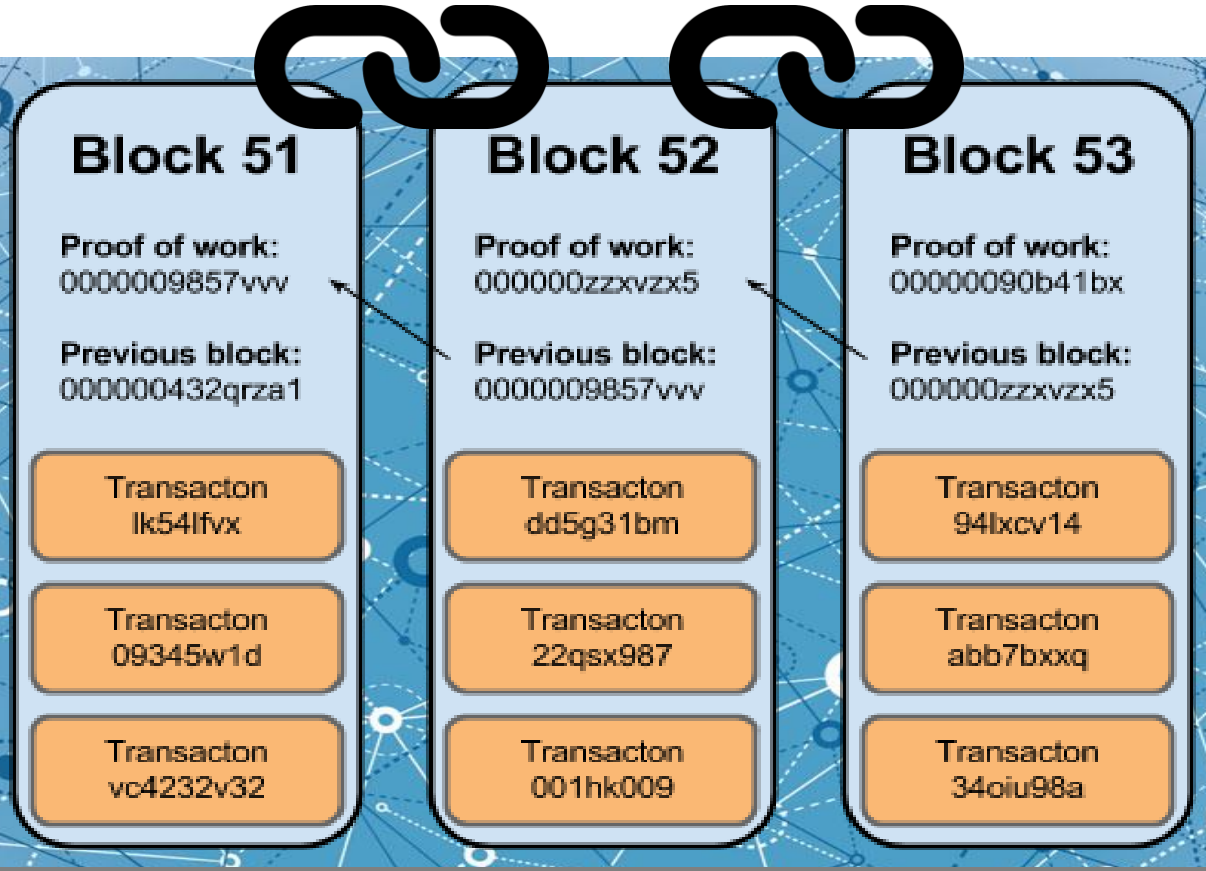


Blockchain primer 2/3

There are several *popular beliefs* about the good and the bad of Blockchains

Most of them have solid roots in reality

Tamper-proof system of record	Robustness & resiliency
Data-intensive applications	Scalability and responsiveness
Confidentiality of data	Per-transaction cost
System governance	Environment impact

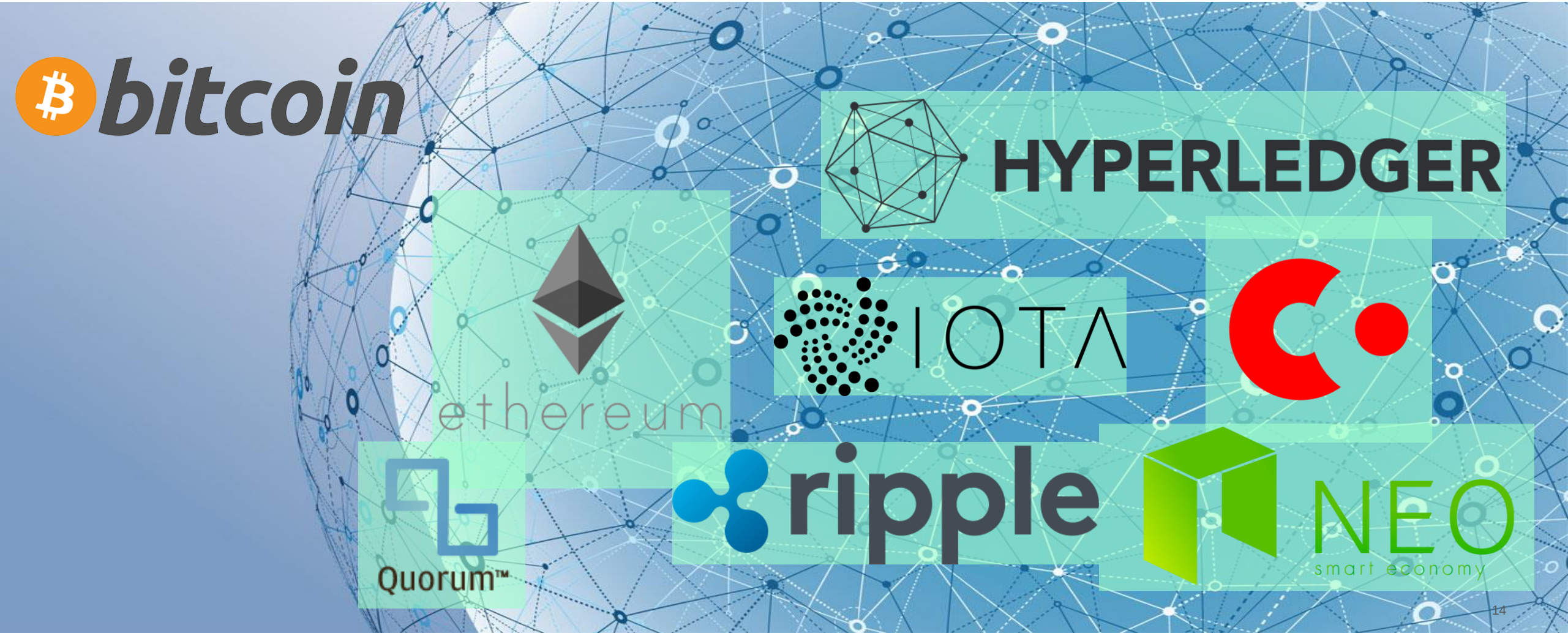


All this was true a couple of years ago, but technology is moving fast

Blockchain primer 3/3

Hundreds of second and third generation Blockchain platforms are blooming

Some of them are really *disrupting* the original concept



What you *really* need to know about Blockchains 1/4

Not all Blockchain platforms are aiming at the same goal

Some of them are dedicated cryptocurrency systems, and will only evolve along that path

Others are flexible in what they allow to transact: you roll your own data model and business logic

As business users, we are mostly interested in platforms belonging to the latter group

The real question is: what can we actually do with them *today*?

What you *really* need to know about Blockchains 2/4

B2B and B2C possibilities are endless...

but some are more *ripe* than others

Selected Potential Blockchain Use Cases

Financial Institutions	Corporates	Governments	Cross-industry
International payments	Supply chain management	Record management	Financial management & accounting
Capital markets	Healthcare	Identity management	Shareholders' voting
Trade finance	Real estate	Voting	Record management
Regulatory compliance & audit	Media	Taxes	Cybersecurity
Anti-money laundering & know your customer	Energy	Government & non-profit transparency	Big data
Insurance		Legislation, compliance & regulatory oversight	Data storage
Peer-to-peer transactions			Internet of Things

Source: Moody's Investors Service

What you *really* need to know about Blockchains 3/4

Blockchain systems come in two basic flavours

The taxonomy is defined by *access model*

PUBLIC

No identities

No restrictions on participants

Totally decentralized with community governance

PERMISSIONED

Digital identities

Participants subject to authorization

Partially decentralized with centralized governance

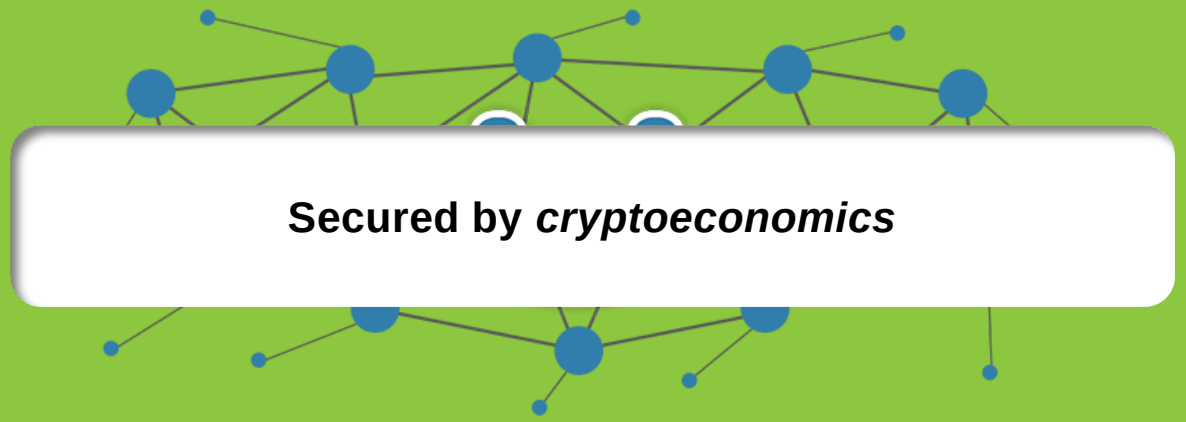
The access model has a profound effect on how integrity can be enforced
The integrity mechanism in turn has a deep impact on the business models that can be supported

What you *really* need to know about Blockchains 4/4

Cryptoeconomics is the only known mechanism that can make public networks possible

Unfortunately they rely on cryptocurrency, which is hardly a viable option for companies

PUBLIC



Secured by *cryptoeconomics*

PERMISSIONED

Secured by diversity

Secured by hardware

Secured by due diligence

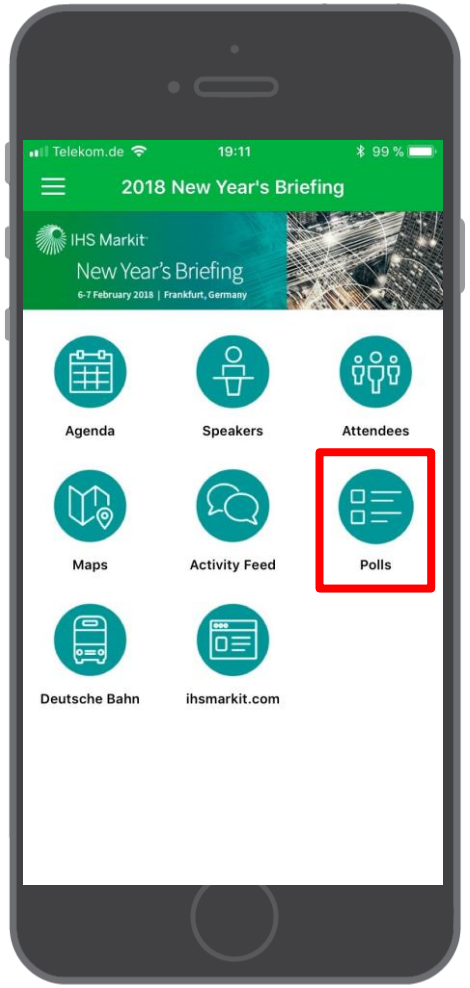
Permissioned systems secured by due diligence are the current SotA for business applications
Blockchain-powered business networks secured by diversity are the most promising for the future

The landscape

Blockchain – Beyond the Hype

Joerg Walden, iPoint-systems gmbh, Joerg.Walden@ipoint-systems.de

POLL QUESTION!



Do you believe that blockchain will disrupt business models in the automotive industry in the next 5 years?

- ☐ Yes
- ☐ No

Access this poll on the event app!

https://api.cvent.com/polling/v1/api/polls/sp-p84jd7

Blockchain – a Universal Solution for Every Industry?

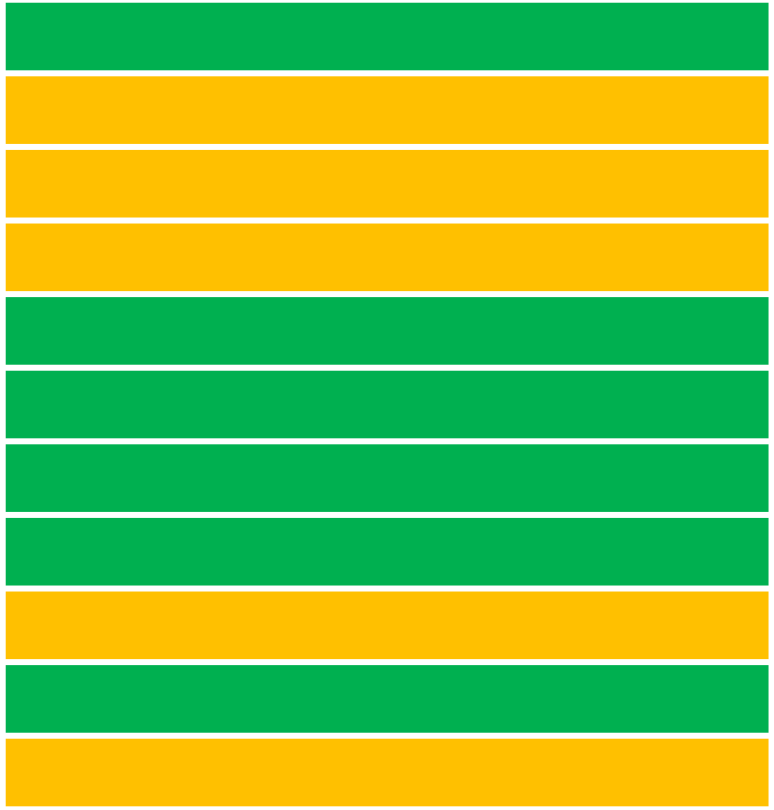
How Can Blockchain Support Materials Traceability?

Challenges:*

- **Correctness and consistency of data**
- **Standardized wording and metrics**
- Full disclosure reporting
- One information for different purposes & sectors
- **Individualization of products**
- **Higher speed for data collection**
- Environmental compliance information
- Social compliance information
- Feasibility of the Digital Twin
- **Intellectual property**
- Resource scarcity

*iPoint research

Potential Blockchain Benefits:



Probably| maybe| probably not

How Can Blockchain Support Supply Chain Transparency?

Challenges:*

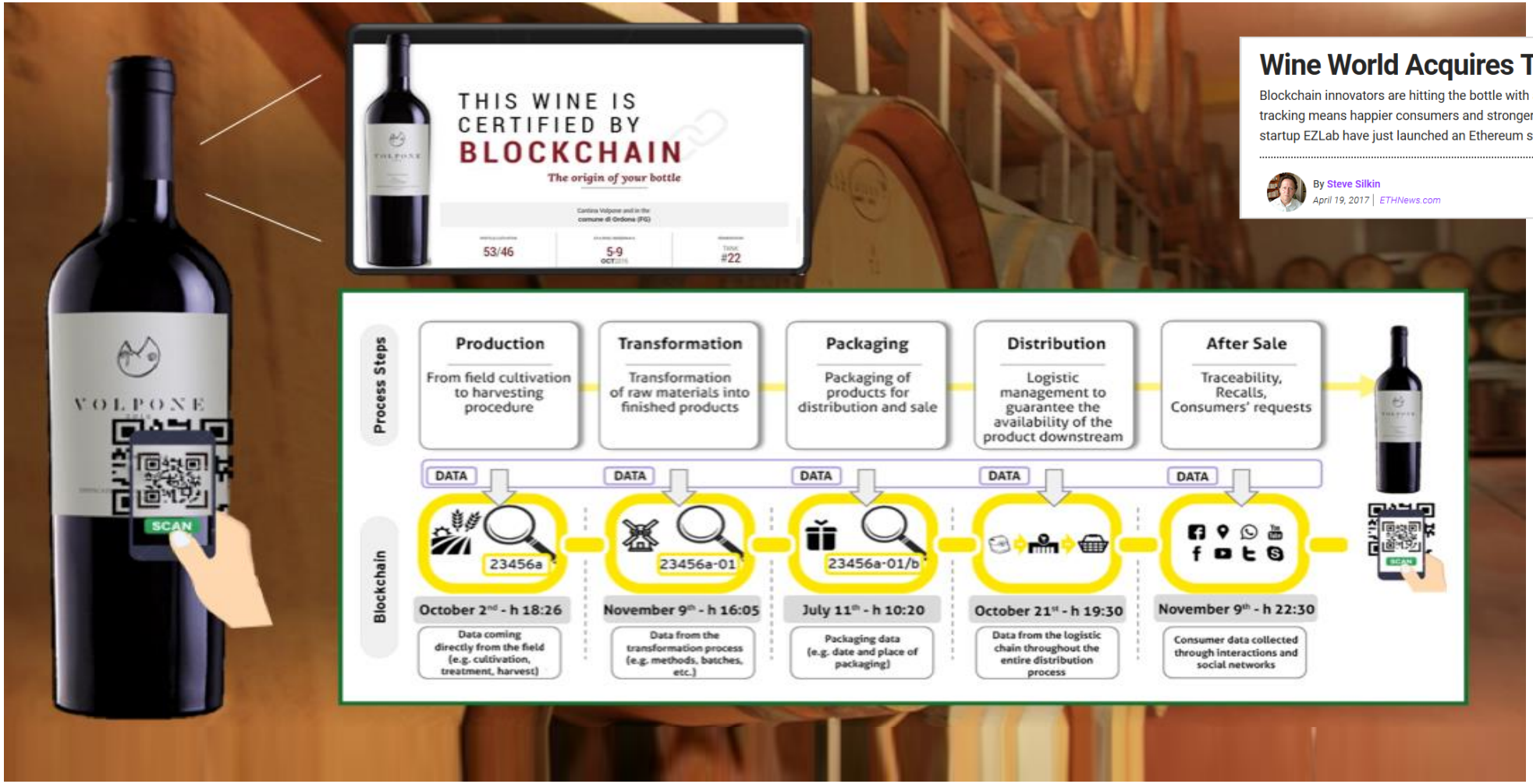
- Confidentiality of Information
- Sensitivity of information
- Consumer requirements (B2C)
- **Customer requirements (B2B)**
- Identification of weak points
- Costs for data acquisition
- **Data ownership**

*iPoint research

Potential Blockchain Benefits:

Probably| maybe| probably not

Use Case 1: Anti-Counterfeiting Measures in the Wine Industry



Wine World Acquires Taste For Blockchain

Blockchain innovators are hitting the bottle with applications for the wine industry, as better tracking means happier consumers and stronger protection against counterfeiting. EY and Italian startup EZLab have just launched an Ethereum system that harvests information for the buyer.

By Steve Silkin
April 19, 2017 | ETHNews.com

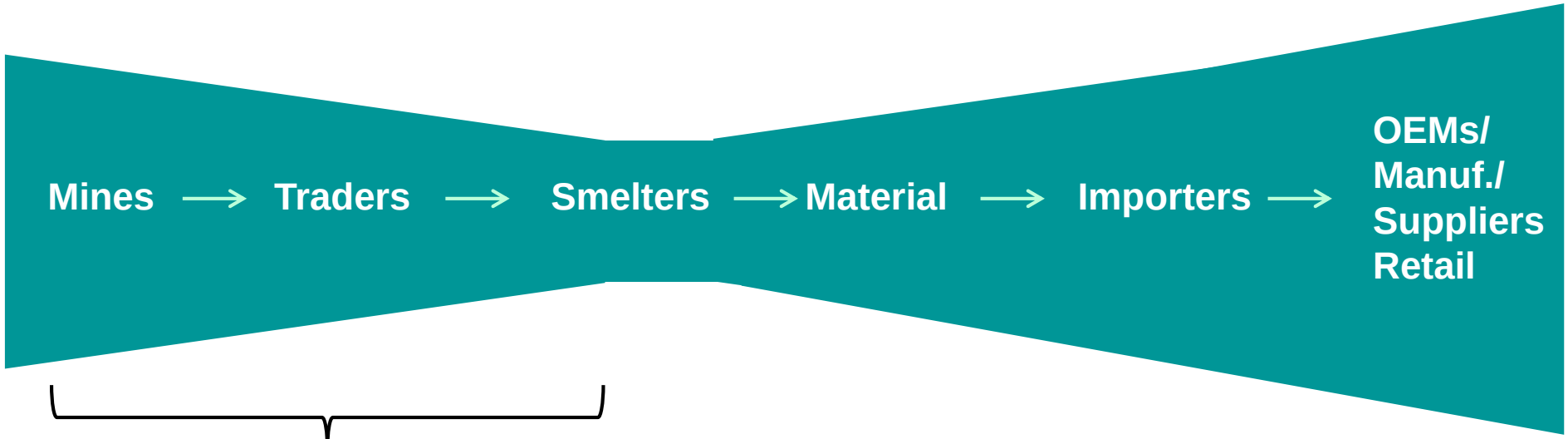
Source: ethnews.com

Use Case 2: Auto Parts Provenance and Tracking

"We have large groups of importers bringing in what looks like genuine parts, but it's unknown if it's a genuine part. We don't know the source, we don't know where it comes from. […] A lot of these parts are used in the collision repair industry. The parts are bought through large importers, and we are concerned about our customers' safety." – Peter Gillam, Nissan

Source: The Sydney Morning Herald, January 13, 2017

Use Case 3: Conflict Minerals Traceability Across the Entire Supply Chain



Responsible Minerals Assurance Process (RMAP)*

*Formerly: Conflict-free smelter program (CFSP)

CMRT

iPoint CONFLICT MINERALS PLATFORM

§§ US Dodd-Frank Act

§§ EU Conflict Minerals Regulation

Use Case 3: Conflict Minerals Traceability Across the Entire Supply Chain

Upstream Mineral Supply Chain | Smelter | Downstream Metal Supply Chain

Audit & Blockchain verified Supply Chain | Blockchain verified Supply Chain

Mining | LocalTrader | Exporter | InternationalTrader | Smelter | Trader | Manufacturer | FinalProduct

Monitor footprint at each supply chain step – Mass Balance?

Measure & rank Better Sourcing impact

90% | 60% | 60%

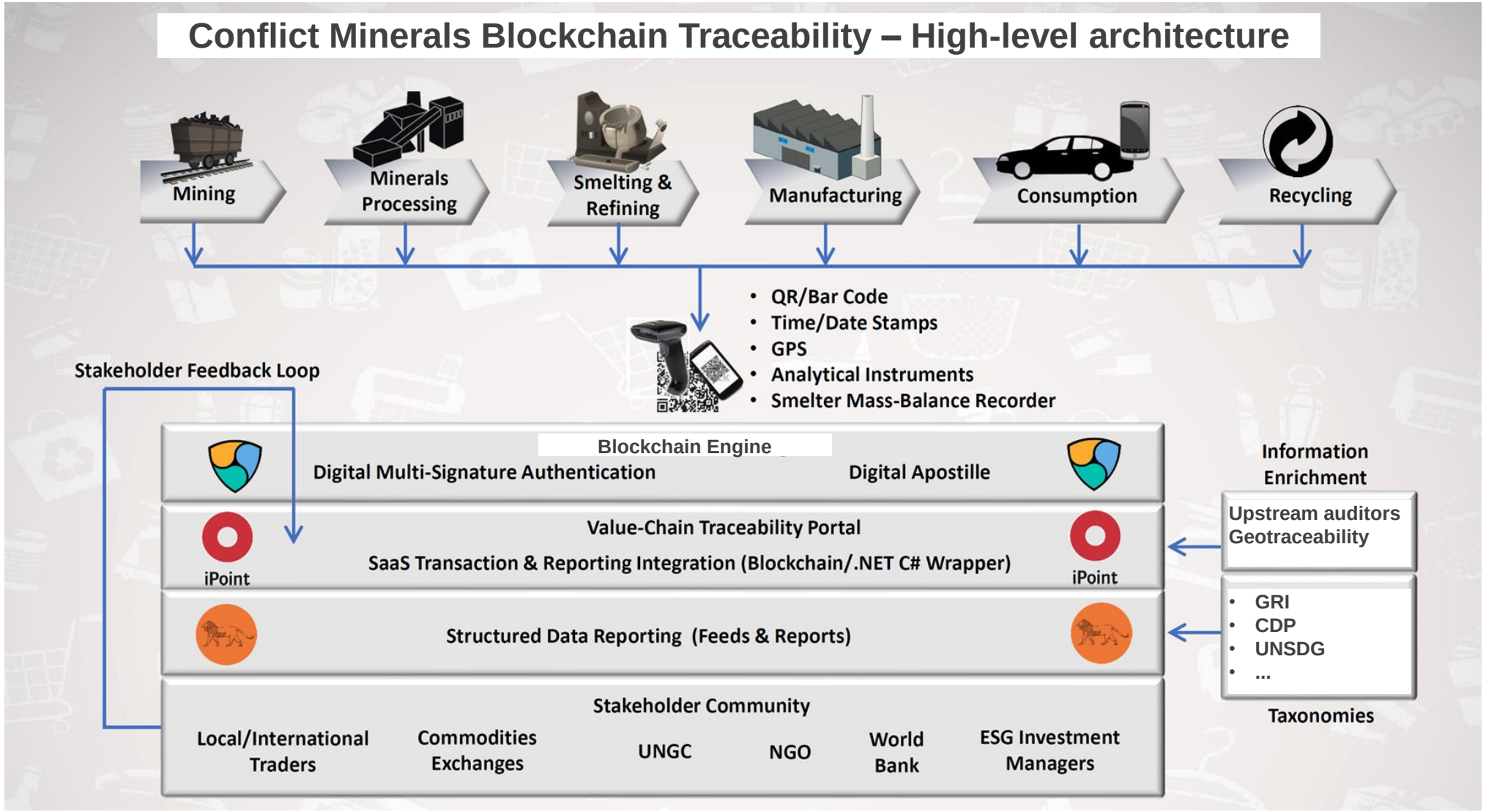
of verified Sustainable Metal

(Traceability based on Mass Balance)

2-folded Blockchain of Custody

Access to relevant upstream due diligence impact data

Use Case 3: Conflict Minerals Traceability Across the Entire Supply Chain



iPoint's EPRM Blockchain Project

The European Partnership for Responsible Minerals is a multi-stakeholder partnership established with the goal to ***create better social and economic conditions for mine workers and local mining communities****, by* ***increasing the number of mines*** *that adopt* ***responsible mining practices*** *in Conflict and High Risk Areas (CAHRAs).*

EPRM members:

- Intel
- Responsible Minerals Initiative (RMI)
- Valcambi
- Apple
- NXP
- Philips
- HP
- Tata Steel
- Umicore
- Fairphone
- Tantalum-Niobium International Study Center (T.I.C.)
- Solidaridad
- IPIS
- Diakonia
- Cordaid
- PACT World
- Dutch Ministry of Foreign Affairs
- UK Foreign & Commonwealth Office

Source: www.europeanpartnership-responsibleminerals.eu

iPoint-led Project "Blockchain-based traceability and data reporting system"

(February 01, 2018 - February 28, 2019)

Pilot Project Invitation

- Do you want to gain insight into your mineral / metal supply chain?
- Is your company importing, processing, or using Tin, Tungsten, Tantalum, Gold or Cobalt in your products?

Contact sebastian.galindo@ipoint-systems.de to participate in the pilot and pave the way for Blockchain-based supply chain traceability.

Using Blockchain to Support Materials Traceability & Supply Chain Transparency

Benefits

+ Traceability of certified inputs and outputs is ensured
+ Unethical and counterfeited sources are kept out of the supply chain
+ Brand reputation and customer loyalty can be increased
+ Costly and corruptible auditors can be replaced by a crowd-based reporting mechanism

Using Blockchain to Support Materials Traceability & Supply Chain Transparency

Barriers

- Getting every supplier on the same blockchain is a major challenge, especially in industries with complex supply chains
- Traceability ≠ sustainability, some companies will damage their brand if unethical or materials sources are revealed
- Blockchain does not in itself exclude “greenwashing”

Thank you!

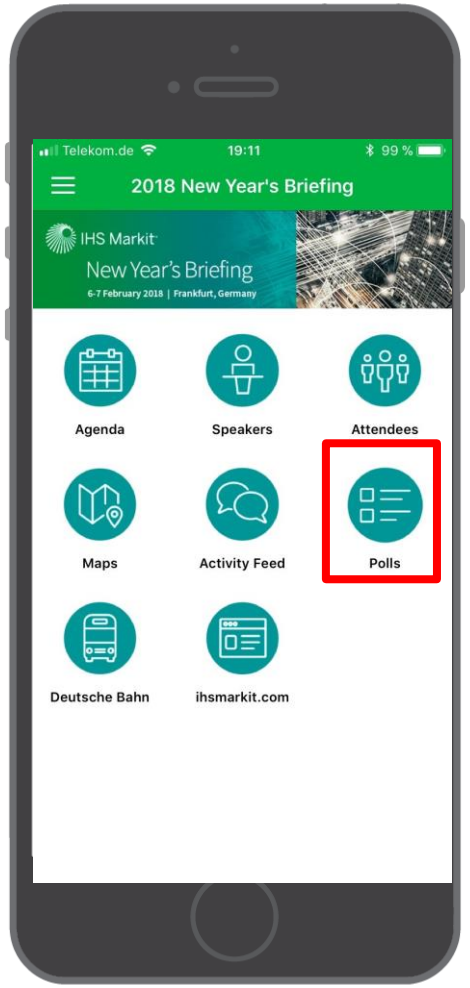
Joerg Walden

iPoint-systems GmbH

Founder & CEO

Joerg.Walden@iPoint-systems.de

POLL QUESTION!



Are you currently using blockchain or thinking of using blockchain in your daily business in the near future?

- ☐ Yes
- ☐ No

Access this poll on the event app!

https://api.cvent.com/polling/v1/api/polls/sptfbu4y

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