Blockchain – The universal remedy for Supply Chain transparency?

6-7 February 2018 | Frankfurt, Germany

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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?

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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

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?

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/](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
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).
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.
Is Blockchain technology ripe for business?

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

<table>
<thead>
<tr>
<th>Financial Institutions</th>
<th>Corporates</th>
<th>Governments</th>
<th>Cross-industry</th>
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<tbody>
<tr>
<td>International payments</td>
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<td>Capital markets</td>
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<td>Anti-money laundering &amp; know your customer</td>
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<td>Insurance</td>
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<td>Legislation, compliance &amp; regulatory oversight</td>
<td>Data storage</td>
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<td>Peer-to-peer transactions</td>
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<td>Internet of Things</td>
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*Source: Moody’s Investors Service*
What you *really* need to know about Blockchains 3/4

Blockchain systems come in two basic flavours:

- **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.

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

Interntl. Payments
- ripple
- American Express
- Santander

Insurance
- ethereum
- AXA

Trade Finance
- HYPERLEDGER
- IBM
- Mærsk

Digital Identities
- Republic of Estonia
- e-Residency

Peer-to-Peer Transactions
- Quorum
- JPMorgan Chase
- r3

Fin. Accounting
- HYPERLEDGER
- CLS
- trusted market solutions

Supply Chain
- HYPERLEDGER
- skuchain
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

*Potential Blockchain Benefits:*

*intPoint research*

**Panel “Blockchain - The Universal Remedy to Trace Materials and Make Supply Chains Transparent?” / Feb 2018**
Use Case 1: Anti-Counterfeiting Measures in the Wine Industry
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

- Mines → Traders → Smelters → Material → Importers → OEMs/Manuf./Suppliers Retail

Responsible Minerals Assurance Process (RMAP)*

*Formerly: Conflict-free smelter program (CFSP)

CMRT

CMF Platform

 §§ US Dodd-Frank Act

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

**Upstream Mineral Supply Chain**
- Audit & Blockchain verified Supply Chain
  - Mining
  - Local Trader
  - Exporter

**Smelter**
- International Trader
- Smelter
- Trader
- Manufacturer
- Final Product

**Downstream Metal Supply Chain**
- Blockchain verified Supply Chain

- Monitor footprint at each supply chain step – Mass Balance?
  - 90% of verified Sustainable Metal
  - (Traceability based on Mass Balance)

- Measure & rank Better Sourcing impact
  - 60%

- 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

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](mailto:sebastian.galindo@ipoint-systems.de) to participate in the pilot and pave the way for Blockchain-based supply chain traceability.

Source: [www.europeanpartnership-responsibleminerals.eu](http://www.europeanpartnership-responsibleminerals.eu)
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

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