GS1 Industry & Standards Event 2019
9-13 September 2019 – Lisbon, Portugal

*Transforming business together*

Session: Blockchain - Moving beyond the hype
Time: 16:00 – 17:00 Lisbon Local Time

Who may attend: Open to All

Speaker(s): Valerie Mazzoni, Marco Schwarzenbach, Tim Marsh
Anti-trust caution

• GS1 operates under the GS1 anti-trust caution. Strict compliance with anti-trust laws is and always has been the policy of GS1.
• The best way to avoid problems is to remember that the purpose of the group is to enhance the ability of all industry members to compete more efficiently.
• This means:
  - **There shall be no discussion of prices, allocation of customers, or products, boycotts, refusals to deal, or market share.**
  - If any participant believes the group is drifting toward impermissible discussion, the topic shall be tabled until the opinion of counsel can be obtained.
• The full anti-trust caution is available via the link below, if you would like to read it in its entirety: [http://www.gs1.org/gs1-anti-trust-caution](http://www.gs1.org/gs1-anti-trust-caution).
Meeting etiquette

- **Meetings will begin promptly as scheduled**
- **Be present – avoid multi-tasking**
- **Avoid distracting behaviour:**
  - Place mobile devices on silent mode
  - Avoid sidebar conversations
- **Be considerate**
  - Avoid monologues
  - Keep comments concise
- **Respect work group decisions**
  - Avoid re-opening decisions unless there is a significant quality impact
- **Collaborate** in support of meeting objectives
  - Ask questions
  - Be open to alternatives
- **Be representative**
  - Avoid personal remarks
  - Do not speak for your company or community if you do not clearly understand their needs
  - Votes should reflect the needs of your company or community
WiFi internet access

- Select network “Sheraton Lisboa” and connect
- Password: **GS1events**
Today’s Journey

- A brief history
- GS1 France: ProductChain
- Live Poll
- GS1 Switzerland: Hackathon
- Position Paper
- Close
Brief history
GS1’s Role and Blockchain

Discovery

Engagement

Knowledge + Participation
Product Information on the blockchain

GS1, Mnesic, Consensys
JULY 2019
Product information is shifting

**Social impact**
- Growth of consumer interest in societal and health impact of products
- Segmentation of consumption profiles leading to personalization
- Growing distrust in institutions and brands

**Economic impact**
- Rise of e-commerce and marketplaces
- Multiplication of brands accessible and market fragmentation
- Absolute value: choice from customers are more based on extensive comparisons

**Technological impact**
- Ubiquity of data access (apps)
- Development of Voice commerce/Chatbot
- Development of image recognition
- Infinite number of data

**Environmental impact**
- Circular economy
- Growing regulation of recycling
- Environmental awareness from consumers
4 trends about product data to cope with

<table>
<thead>
<tr>
<th></th>
<th>Trend</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Infinity</td>
<td>One source cannot manage all the data</td>
</tr>
<tr>
<td>2</td>
<td>Decentralization</td>
<td>A distributed framework is required</td>
</tr>
<tr>
<td>3</td>
<td>Accuracy</td>
<td>Data quality is not an option</td>
</tr>
<tr>
<td>4</td>
<td>Trust</td>
<td>Authentication of sources is a need</td>
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</tbody>
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### Product Data faces multiple challenges and inefficiencies

<table>
<thead>
<tr>
<th>CHALLENGES</th>
<th>INEFFICIENCIES</th>
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<tbody>
<tr>
<td><strong>Increasing complexity of data mngt.</strong></td>
<td>Unsustainable multiplication of exchange channels</td>
</tr>
<tr>
<td>One to one sharing of Product information</td>
<td>Changes propagation &amp; monitoring across channels</td>
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<tr>
<td>Extended information and updates</td>
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<tr>
<td><strong>New emerging voices</strong></td>
<td>Multi-stakeholder product information contributions</td>
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<tr>
<td>Consumer apps use contribute to product data</td>
<td>Hard to authenticate products data contributors, blurring lines between sources</td>
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<td>Emergence of loose &amp; non curated data pools</td>
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<tr>
<td><strong>Increasing costs</strong></td>
<td>Development of data beyond traditional product information (reviews, unboxing videos etc.)</td>
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<td>Transaction and condition of diffusion of information require contractual management</td>
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The ecosystem needs a better product data management

<table>
<thead>
<tr>
<th></th>
<th>Consolidated source of information</th>
<th>... will help foster a dynamic growth of new forms of commerce</th>
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<tbody>
<tr>
<td>2</td>
<td>Authoritative and open framework</td>
<td>... is required to have all actors able to contribute, while being clearly identified</td>
</tr>
<tr>
<td>3</td>
<td>Fair to all, without centralisation of power in one or a group of actors</td>
<td>... is key to avoid information asymmetry as well as creation of a data monopoly</td>
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Opportunity
Project vision is to create an ecosystem of product information

Create an open and multi-stakeholder product information repository where everyone is responsible for their own information. It will give brands, manufacturers, suppliers, distributors, solution providers, labels, consumer opinion makers the opportunity to share - or not - their respective information without going through a single intermediary.
Solution: a blockchain platform for product information

1. Solution: a blockchain platform for product information

2. Cryptographic identification of information contributors

3. Decentralized with no single actor in control
### Future of Data Sharing

<table>
<thead>
<tr>
<th></th>
<th>Data Sources</th>
<th>Data Access</th>
<th>Shared Data</th>
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<tbody>
<tr>
<td><strong>Today</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>GDSN</td>
<td>Brands</td>
<td>To retailers mainly</td>
<td>Rich data set</td>
</tr>
<tr>
<td>Registry Platform</td>
<td>Brands</td>
<td>Open</td>
<td>Minimal data set</td>
</tr>
<tr>
<td>Registry Platform + Digital Link</td>
<td>Brands</td>
<td>Open (under brands Control)</td>
<td>Rich data set</td>
</tr>
<tr>
<td>Product Information on the Blockchain</td>
<td>Multi-sources</td>
<td>Open (under sources control)</td>
<td>Endless possibilities</td>
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**Tomorrow**
ProductChain Concept
ProductChain Preliminary Usecases

**Brand**
I am interested in collecting reliable consumer opinions on my products to improve them and to offer better services.

**Retail**
I would like to improve my website with more enriched information about my product.

**Consumer application**
I need to improve the reliability of product information to serve consumers better.

**Scoring application**
I would like to retrieve new specific consumer opinions on allergens.
How does ProductChain works?

**GTIN Activation**
Brand (through the GS1 Registry Platform) **publish the first basic product information** in the Blockchain.

This **certifies** the veracity of the GTIN to activate it.

**Product info contributions**
User (e.g., retailer) finds the GTIN & related product information on the platform and uses it at will (e.g., on e-commerce website).

User can independently **verify the information** is authentic and not revoked.

**Complementary services offering**
Opportunity to **create an ecosystem of services** leveraging product information, such as
- multi stakeholder annotation & classification
- DQ engines (e.g., using AI)
- notification & alert services
- complementary business interactions

**Product info utilization**
Brand or any other user contribute to product information by **issuing crypto-graphically signed product information**, such as composition, comments, photo, video, label, etc.
Why using blockchain technology?

**Trusted and open repository of information**
While “data in” contribution is opened to everyone, brands and retailers can independently identify and check who has contributed and recognize the source, or not.

Repository control and management is shared among multiple parties.

**Inherently secure and easily scalable store of information**
Blockchain has high availability and no failure built in, allowing a rapid & economical production readiness.

Blockchain offers capacity to scale to a network with millions of contributors with few infrastructure change.

**Programmable rules and business logic**
Blockchain allows to build programmable business rules and logic visible by everyone allowing open governance.

Smart contracts simplify creation of new services on top of product information.
We need you!

Contact the GS1 France Innovation Team!

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Stéphane Cren
Head of Innovation
Stephane.cren@gs1fr.org
Thanks you!
Live Poll
Which of the following represents your most important unmet need respective of Blockchain technology?

1. Practical examples of cost-benefit with blockchain technology (41%)
2. Materials to aid in discussing blockchain with your customers (4%)
3. Guidance to customers on using blockchain technology with GS1 standards (22%)
4. Education on blockchain for you and your MO colleagues (13%)
5. In depth technical content on...

Source: https://api.cvent.com/polling/v1/api/polls/sp-kyb4o1
As GS1 which of the following tools and documents would be most impactful to industry?

1. A GS1 public website on blockchain for industry stakeholders  - 13%
2. Publicly available marketing collateral on GS1 standards and blockchain (position papers, slides, flyers, brochures) - 9%
3. A developers' hub with code and tutorials for data sharing with blockchain and GS1 standards - 40%
4. Educational materials on using GS1 standards within solutions that utilize blockchain technology - 38%

Source: https://api.cvent.com/polling/v1/api/polls/spdaf4vh
What do you believe GS1's primary role should be respective of Blockchain technology?

1. Educate industry on the state of maturity of blockchain technology - 17%
2. Advise industry on use of the technology as part of options for their data sharing needs - 37%
3. Provide industry with tools to enable their use of blockchain as part of their data sharing needs - 28%
4. Develop and launch a GS1 Blockchain solution for industry’s data sharing needs - 17%

Source: https://api.cvent.com/polling/v1/api/polls/sp-g3pn5q
GS1 Industry & Standards Event 2019
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Transforming business together

Session: Moving beyond the hype – what is GS1 doing about blockchain?

Time: September 9, 2019; 16:30 – 16:50 CET

Who may attend: Anyone interested in hearing about what GS1 Switzerland is doing in the area of blockchain

Speaker: Marco Schwarzenbach – Standards Expert, GS1 Switzerland
Agenda

- Brief description of the Swiss Blockchain Hackathon (#SBHACK)
- Verticals and participating companies
- Problem statement and challenges for the vertical «Supply Chain»
- Impressions of the #SBHACK
- Take-aways and next steps for GS1 Switzerland
The #SBHACK was Switzerland’s first blockchain hackathon

What
• Joint effort between six of Switzerland’s leading blockchain and IT institutions to organize the country’s largest blockchain hackathon.

Why
• Promote blockchain technology through real-life challenges in a variety of fields.
• Strengthen Switzerland’s position as a leading location for blockchain R&D.
• Zurich, Switzerland between June 20 and 23, 2019.
There were 6 verticals and 23 participating companies

**Supply Chain**
- Accenture (Lead)
- GS1 Switzerland
- Panalpina
- Cargolux
- Smartcontainer

**Intelligent Parcel**
- Swiss Post (Lead)
- Qperior
- MS Direct
- modum.io

**Public Services**
- Canton of Zurich (Lead)
- Botlabs
- Procivis

**Finance**
- SDX (Lead)
- i.AM Innovation Lab
- Sygnum
- Verum Capital

**Agriculture & Food**
- Agroscope (Lead)
- ARC
- Dezentrum
- Sigmaledger

**Mobility**
- ZVV (Lead)
- Mobility
- Webtiser
Problem statement for the vertical «Supply Chain»

- The implementation of blockchain technology within a supply chain continues to be limited and has not yet surpassed the PoC phase. One hurdle in the acceptance of blockchain technology is the missing standards related to one solution, or between two blockchain solutions.

- **The idea:** Combine blockchain and GS1 standards to unlock the value of the technology within a collaborative supply chain ecosystem.

- The illustration is an example of a supply chain starting from the raw material to consumption.
Challenges for the vertical «Supply Chain»

- **Challenge 1**
  - **Goal:** Establish an application programming interface (API) that is able to communicate between two blockchain solutions.

- **Challenge 2**
  - **Goal:** Create a solution that ensures traceability and authentication of unique products within the pharma supply chain.

- **Challenge 3**
  - **Goal:** Guarantee traceability and authentication without divulging confidential product information with a public blockchain.
Summary of the vertical «Supply Chain»

Teams

- Five hacker teams took on our challenges
  - Three were from existing companies.
  - Two were «created» at the start of the hackathon.

Challenges addressed

- Most of the teams addressed challenges 2 and 3. Two of the teams addressed challenge 1 to a certain degree.

The reasons winning team was selected

- Integration of GS1 standards, IoT and p2p communication.
- Different companies were reflected in the supply chain.
- Valid information was placed on the blockchain without revealing all of the information.
Impressions from the #SBHACK

- 42 hours of hacking
- 60 coaches
- 200 hackers (39 teams from 19 countries)
- 6,200 messages on Slack
- 20,000,000 lines of code
The #SBHACK showed that GS1 standards can be incorporated into blockchain technology

<table>
<thead>
<tr>
<th>Business applications</th>
<th>Data sharing identifiers</th>
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<tbody>
<tr>
<td>• Tracking &amp; traceability of shipments or containers</td>
<td>• Application Identifiers (AI): GTIN, SGTIN, GLN, GRAI, SGTIN, SSCC</td>
</tr>
<tr>
<td>• Anti-counterfeit</td>
<td>• EPCIS Events and CBV</td>
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<tr>
<td>• Temperature</td>
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<table>
<thead>
<tr>
<th>Data sharing technology</th>
<th></th>
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<tbody>
<tr>
<td>• Public blockchain: Ethereum</td>
<td></td>
</tr>
<tr>
<td>• Consortium blockchain: Corda</td>
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Completed and next steps for GS1 Switzerland

- Review with winner team
  - Coaches from GS1 Switzerland met with the winner team from the vertical «Supply Chain» to learn more about their solution.

- Define a use case
  - Work with startups and solution partners to identify possible use cases.

- Implement a blockchain pilot project
  - Collaborate with startups, solution partners and companies along a supply chain to carry out a pilot project.
  - Begin a blockchain pilot project in 2019 or early 2020 using GS1 standards.
Tiger Team
2019-2020 Plan

**MO Collaboration**
- Partnering with leading MOs working in this area...

**Striving for interoperable data sharing!**

**Plan**
- Align with our objectives as an organization.
- Deliver new messaging:
  - Our 3rd Position Paper
- Identify possible Standards Developments.
- Identify “tools” that may be provided to industry.
Traceability and Blockchain Position Papers

**GS1 Recommendations - 2017**

**Bridging Blockchains - 2018**

**Traceability and Blockchain - 2019**

- Important considerations for business readiness and interoperability
- If industry determines that blockchain offers a level of trust and validation that traditional data-sharing mechanisms cannot, then there must be a call to action to ensure the interoperability of blockchain-based traceability solutions.
Traceability and Blockchain Position Paper

**Business Considerations**
- Use of existing standards
- Sector-specific application standards
- Governance for ecosystems

**Technical Considerations**
- Discovery of partners
- What is written to the ledger
- Standards needs
- Support of interoperability
Thank you!