Creating Digital Trust with Blockchain in Multi-Party Collaboration

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Agenda

Introduction to Blockchain

SAP Cloud Platform Blockchain

Blockchain for Supply Chain

Bumble Bee Foods – Ocean to Table Traceability with Blockchain

Wrap Up
Blockchain in Numbers

83%
of life science leaders believe Blockchain will be adopted within 5 years

>50%
of companies in consumer products, life science, healthcare, tech and media already deploying Blockchain solutions

Over $1,4bln investments over the past 3 years

71%
of business leaders using Blockchain believe it plays a key role in advancing the technology and reestablishing industry standards

90+
central banks engaged in DLT discussions worldwide

Market cap of public Blockchain assets breaks $100bln

2500+
patents filed over last 3 years

24+
countries currently investing in Blockchain

1. Finds Survey from The Pistoia Alliance, 20.09.2017
What is Blockchain?

Composition of Existing Technologies
- Decentralized peer-to-peer technology
- Private / Public key cryptography + hashing algorithms
- Consensus algorithm

Shared Information Storage
- Distributed
- Transparent
- Immutable

Cryptographically Linked Blocks

Smart Contracts (depends on blockchain protocol)
- Can represent a business contract and guarantees automation of business rule execution
Landscape of “Blockchain Solutions” – Not-exhaustive
Enterprise Blockchain - Business Value Drivers for Supply Chain

**Optimize Processes**
Peer-to-peer business network with fewer intermediaries

**Trusted Ecosystem**
Decentralized, tamper-proof and verifiable data shared by all parties

**Data Integrity**
Provability & automated business rules using smart contracts
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Wrap Up
The Intelligent Enterprise
The foundation of a Digital Supply Chain

The Intelligent Enterprise features 3 key components:

1. Intelligent Suite
2. Intelligent Technologies
3. Digital Platform
Intelligent Enterprise – Role of Blockchain

Focus on the needs and processes of the enterprise

Focus on the network of participants

Blockchain requires participants to think beyond organizational boundaries
SAP Cloud Platform Blockchain
Enabling customers and partners to leverage Blockchain capabilities

Applications & Business Processes

Application Services
Event recording, verification, audit trail, provenance, analytics, identity

Enabling Services
S4/HANA Cloud SDK (incl. Blockchain), HANA Integration, REST Services

Platform Services
MultiChain, Hyperledger Fabric, Quorum

Ecosystem
Cross-company collaboration

SAP Cloud Platform
Network Extension
Blockchain Orchestrates Cross-Company Processes
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Wrap Up
Sample List of Blockchain Use Cases Covered By SAP
Across different Lines of Business and Industries

Blockchain for Supply Chain

- International Trade (PoC)
- Safeguarding the Semiconductor Value Chain against Counterfeits (PoC)
- Pharmaceutical Saleable Returns (SAP Information Collaboration Hub for Life Sciences, option for U.S. supply chain)
- Farm to Consumer (SAP Logistics Business Network for Material Traceability – Planned Innovation 2019, currently in Beta)

- Secure Bidding in Procurement
- Guarantee Network
- Bonded Loans
- Secured Authorization Procedures in Public Sector
- Disaster Operations
International Trade is fraught with inefficiencies

- International trade in most instances is still dependent upon slow, paper-based processes
- Shippers and Consignees spend considerable time and resources, and incur costs on resolving discrepancies and disputes
- Fraud, document loss or falsification, demurrage and finance costs are issues that business partners deal with frequently

SAP launched a Proof of Concept initiative for using blockchain technology to provide supply chain transparency and visibility to streamline the international trade process with real-time view of the current state of the trade using shared, tamper-proof, and verifiable trade documents.
International Trade Blockchain PoC

TAMPERPROOF
Process & Ownership Trail

DIGITAL
Data, Documents, Transactions

SECURE
Partner Access

International Trade Blockchain

Initiate Trade → Initiate Shipment → Shipment Delivery → Trade Settlement

Letter of Credit, Commercial Invoice.. → Packing List, Export Declaration.. → Bill of Lading → Import Declaration, Release Order

Export Customs Clearance → Import Customs Clearance

Pick-up Driver Assignment → Identity Check, Secure Container Release
Global Issue of Food Quality and Waste

- 1 in 10 people fell sick every year due to poor quality food and 420,000 people die each year from foodborne diseases\(^1\)
- The supply chain complexity makes it difficult to quickly respond to product recalls
- 30% of the food produced is spoilt or wasted\(^2\), yet a global population expected to grow to 9.8 billion by 2050\(^3\)

SAP launched Farm-to-Consumer blockchain initiative with 13 customers to improve material provenance and traceability by providing a decentralized platform to enable data sharing across the supply chain network and improve end-to-end visibility.

\(^1\) World Health Organization  
\(^2\) Food and Agriculture Organization of the United Nations  
\(^3\) United Nations Department of Economic and Social Affairs
Farm-to-Consumer Blockchain Co-Innovation Proof of Concept

Transparency of food genealogy across the entire supply chain

Business Goals:
- Reduce food waste
- Streamline recalls and reduce amount of product to be recalled

Technology Goals:
- Prove applicability of Blockchain through a joint proof of concept across the supply chain
- Augment SAP traceability solutions like SAP Global Track and Trace cloud network with Blockchain
SAP Logistics Business Network, Material Traceability*

Trace material provenance from raw material batch origin to finished product across an n-tiered material value chain with a state-of-the-art technology approach

- Decentralized platform to enable data sharing across the supply chain network and improve end-to-end visibility
- Alert your supply chain partners in case of a product issue
- Integrate with your business backend systems
- Leverage capabilities of SAP Cloud Platform Blockchain as a Service

* beta program
Agenda

Introduction to Blockchain

SAP Cloud Platform Blockchain

Blockchain for Supply Chain

Bumble Bee Foods – Ocean to Table Traceability with Blockchain

Wrap Up
Blockchain Traceability Project *Objectives*

- Started our journey to optimize our supply chain and expand our industry leadership around traceability and sustainability
- Ultimate goal to provide consumers with full transparency
- Find a strategic partner to implement best-in-class blockchain technology
Blockchain Traceability Project *Challenges*

- Technical limitations with implementing a solution in the remote islands of Indonesia
- We don’t own a single piece of the supply chain from catch to finished goods
- How do we get the fishers, suppliers, and 3rd party manufacturing companies to participate (share data)
Blockchain Traceability Project *Roll-out*

- Evaluated several vendors and selected SAP as our strategic partner
- Implemented SAP Blockchain Platform and SAP Cloud Analytics
- Kick-off > Sept 2018; Pilot > Dec 2018; Production > Feb 2019
Blockchain Traceability Project **Solution**

- QR Code on our Fair Trade Natural Blue Anova yellowfin tuna from Indonesia

- Consumer mobile app to display traceability, sustainability, Fair Trade information, and recipes

- Supplier dashboard in pilot on SAP Cloud Analytics

- Lab Results reference information on the blockchain
Where the tuna was caught?
What was the fishing method?
What was the species?
Was it fair-trade?

Details about the trip to show that the tuna was caught in a sustainable way (e.g. no overfishing, small boats, handline fishing which entails no bycatch)

Community stories and benefits from fair-trade:
- Story 2: donation for school books: so children can go to school and do not have to work
- Story 4: safety equipment for fishers e.g. gloves for handline fishing

Recipes
Blockchain Traceability Project **Outlook**

- Onboard new Indonesian fish supplier on SAP Blockchain
- Deploy SAP Cloud Analytics supplier dashboard
- Pilot Lab Results documents via SAP blockchain technology with several strategic retailers
- Continue evaluation of IoT technologies and applicability
- Implement other Bumble Bee brands on SAP Blockchain
- SAP Ocean to Table product solution
Agenda

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Wrap Up
In Summary

1. Blockchain enables real-time view of the end-to-end supply chain improving **transparency and visibility**

2. By automating end-to-end, cross-company processes, blockchain increases **supply chain efficiencies** and reduces **costs**

3. Blockchain ensures product **safety**, verifies **authenticity**, and promotes **sustainability**
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<td>ASUG82553</td>
<td>Tuesday, May 7 12:00 - 12:40</td>
<td>330A</td>
<td>Creating Digital Trust with Blockchain in Multiparty Collaboration</td>
<td>ASUG Presentation</td>
<td>Ganesh Wadawadigi SAP; Tony Costa Bumble Bee Foods LLC</td>
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<td>DS86376</td>
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<td>Digital Supply Chain DS120</td>
<td>Support a Counterfeit-Free Pharmaceutical Supply Chain with Blockchain</td>
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<td>Use Your Company’s Data to Enable the Intelligent Enterprise</td>
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<td>Roundtable 3 (220E)</td>
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<td>TBD1</td>
<td>The Power of Blockchain: Solving Complex Business Problems</td>
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<td>NE89591</td>
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<td>Network and Spend Management NE511</td>
<td>Streamline Intergroup Credit Management with Blockchain Technology</td>
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<td>Thursday, May 9 11:30 - 11:50</td>
<td>Digital Supply Chain DS122</td>
<td>Add Blockchain Trust to International Trade</td>
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<td>310B</td>
<td>Blockchain Services and Use Cases: SAP Cloud Platform</td>
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<td>Bring Trust and Transparency into the Food Supply Chain with Blockchain</td>
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Presentation Materials

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Q&A

For questions after this session, contact us at
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