Blockchain for Sustainable Development aligned with AP-IS
Ryotaro Sekine, Associate Partner, Digital Strategy Consulting, Global Business Service, IBM Japan
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2. Potential Contribution Area for AP-IS, ESCAP
Blockchain is the technology to create the Business network platform across organization and countries

<table>
<thead>
<tr>
<th>Feature</th>
<th>Current Centralized Platform (Payment etc)</th>
<th>Public Blockchain (Bitcoin etc)</th>
<th>IBM Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ TTP (Trusted Third Party)</td>
<td></td>
<td></td>
<td>✓ Specific Consortium operates</td>
</tr>
<tr>
<td>✓ Secure, High performance</td>
<td></td>
<td></td>
<td>✓ No Security Concern</td>
</tr>
<tr>
<td>✓ Many TTP involved for cross boarder, cross industry</td>
<td></td>
<td></td>
<td>✓ High Scalability</td>
</tr>
<tr>
<td></td>
<td>Tom</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bank A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bank B (JP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alice</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bank A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bank B (US)</td>
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<td></td>
</tr>
</tbody>
</table>

Used to create Business Networks (incl, NPOs)
However, Blockchain enters disillusion phase in Hype Cycle due to the difficulty to create business value, governance model, technical / regulatory issues.
IBM point of view for blockchain trend, as of 2018

1. More proof-of-concepts moving to production
2. Blockchain technology will mature
3. More traditional players and financial institutions will get involved in cryptocurrency
4. Continued focus on targeted use cases
5. Strong blockchain ecosystems will become critical success factors
IBM is making blockchain real for business with cross-industry solutions and over 100 active networks.
IBM Works associated with Sustainable Development Goals

1. No Poverty
   - World Wire

2. Zero Hunger
   - IBM Food Trust

3. Good Health and Well-Being
   - Patient Record: FDA

4. Quality Education
   - Sony global education

5. Gender Equality
   -

6. Clean Water and Sanitation
   -

7. Affordable and Clean Energy
   - Tennet (distributed energy)

8. Decent Work and Economic Growth
   - World Wire

9. Industry, Innovation and Infrastructure
   - Tradelens (shipping)
   - Roaming (telco)

10. Reduced Inequalities
    -

11. Sustainable Cities and Communities
    - Ticketing: German Railways

12. Responsible Consumption and Production
    - Plastic bottle: The Plastic Bank

13. Climate Action
    -

14. Life Below Water
    -

15. Life on Land
    -

16. Peace, Justice and Strong Institutions
    -

17. Partnerships for the Goals
    -

IBM Food Trust - Leverages blockchain to address main food industry concerns

<table>
<thead>
<tr>
<th>Food Safety</th>
<th>Supply Chain Optimization</th>
<th>Food Waste</th>
<th>Consumer Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 out of 10</strong></td>
<td><strong>80%</strong></td>
<td><strong>1 / 3</strong></td>
<td><strong>Only 1 in 4</strong></td>
</tr>
<tr>
<td>people get sick each year, and <strong>420,000</strong> die from foodborne illness</td>
<td>of CPGs say their business is partially or entirely paper-based</td>
<td>of global fresh fruits and vegetables are thrown away because their quality</td>
<td>94% say they’d be more loyal to brands that offers transparency</td>
</tr>
</tbody>
</table>

**Early Adopters**

IBM Food Trust solution provides secure access to end-to-end food supply chain information via specialized modules

- **Trace**
- **Certification**
- **Freshness**
- **Consumer**

**IBM Blockchain**

- **DJole**
- **McKesson**
- **McLane**
- **Tyson**
- **Driscoll’s**
- **Unilever**
- **gfsi**
- **Walmart**
- **Nestle**
- **Kroger**

*Part of 2018 roadmap for delivery*
Economic Growth: World Wire – Cross-boarder, real-time financial rails with Stable Coin

For Instance, for foreign workers it becomes faster / cheaper to send money to their home country.
Education: Learner’s credentials can be shared with any entity with trusted Blockchain network. By embedding AI on top of it, automated job matching / career advisory would be available, which supports Learner’s life long learning.
Industry Innovation:

TradeLens – Visualize end-to-end logistics

**SHIPPING MILESTONES AND SHIPMENT DATA**

- Start container tracking
- ETA empty container picked up from depot
- Empty container picked up from stuffing site
- Container/stuffing completed at inland location
- ATA empty container at stuffing site
- Container unloaded at swimming site
- ETA empty container at terminal export
- Estimated discharge time for packed container at terminal import
- Import documentation cleared
- Container ready to load
- Estimated gate in for packed container at terminal export
- Gate in full at terminal export
- ATD packed container from export terminal
- ETA packed container at import terminal
- Container selected for inspection
- Packed container discharged at import terminal
- ETA packed container at import terminal
- Packed container stripped at inland location
- Seal removed
- Empty container picked up from stripping location
- Empty container ready for pick up
- ATD empty container at stripping site
- ETA empty container at depot
- Container tracking ended

**STRUCTURED AND UNSTRUCTURED DOCUMENTS**

- Packing List
- Bill of Lading
- Export Documentation
- Advance Declaration
- Pre-Paid Invoice
- Certificate of Origin
- Shipping Instructions
- ISF
- Geography Specific Certificate
- Dangerous Goods Declaration
- Cargo Specific Certificate
- Customs Clearance
- Commercial Invoice
- Import Documentation

**TRADELENS BLOCKCHAIN BUSINESS NETWORK**

**TRADELENS PLATFORM**
Industry Innovation: Syniverse: Universal Clearing and Settlements

**What**
- Solving Clearing & Settlement challenges by removing obstacles to generate revenues from new and complex business relationships
- Overcome lack of standardization and automation in industries hinders and introduces unnecessary delays in cash collection

**How**
- A solution that embraces new technologies to strengthen the value proposition of Clearing and Settlement
- Standardizing the non-standard, any to any clearing and settlement
- Core set of modules (functions) applied, fit for any use case /market

**Benefit**
- Improved - end to end - process towards monetization
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2. Potential Contribution Area for AP-IS, ESCAP
Three important elements – Governance, Business Value, and Technology

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<tr>
<th>Governance Design</th>
<th>Design a governance model aligned to member incentives to govern: fair, democratic, transparent and evolving marketplace rules and privileges; and the protocol’s economic model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Value Design</td>
<td>Design a winning business model including appropriate monetisation, incentive and tokenisation models to drive collaboration and network effects</td>
</tr>
<tr>
<td>Technology Design</td>
<td>Design winning human experiences to drive mass adoption of new network economy digital products and services. Design necessary privacy, security and custodian services for digital assets</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Context</th>
<th>Vision</th>
<th>Design</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance Design</td>
<td>Ecosystem Assessment</td>
<td>Founder Engagement</td>
<td>Governance Charter</td>
</tr>
<tr>
<td>Business Value Design</td>
<td>Opportunity Assessment</td>
<td>Market Assessment</td>
<td>Business Model Design</td>
</tr>
<tr>
<td>Technology Design</td>
<td>Platform Assessment</td>
<td>Product Vision</td>
<td>Minimum Viable Product</td>
</tr>
</tbody>
</table>

NETWORK DESIGN FRAMEWORK
### Business Value - Identify suitable use case area

#### Example of SDG – AP-IS alignment

<table>
<thead>
<tr>
<th>SDG Themes (Issue)</th>
<th>Zero Hunger</th>
<th>Economic Growth</th>
<th>Industry Growth</th>
<th>No Poverty</th>
<th>Quality Education</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>IBM Block-Chain</th>
<th>Food Supply Chain</th>
<th>Logistics (Shipping)</th>
<th>Telecom Roaming</th>
<th>Payment/ Settlement</th>
<th>Education</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>AP-IS</th>
<th>Retail</th>
<th>Logistics</th>
<th>Telcom Carriers</th>
<th>Financial Institute</th>
<th>Educational Institute</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Region</th>
<th>Connectivity Established Countries (i.e. Japan, Korea etc)</th>
<th>Connectivity Undergoing Countries (i.e. Central Asia etc)</th>
</tr>
</thead>
</table>

**Collaboration area:**
- **SDG Issue driven**
- **AP-IS Infra availability driven**

**Connectivity Established Countries:**
- Japan
- Korea

**Connectivity Undergoing Countries:**
- Central Asia
Business Value – TradeLens logistics example
Detailed Use Case Creation

- Ocean Carriers
  - MAERSK
  - CMA CGM
- Customs Brokers
- Inland Transportation
- Port & Terminal Operating Systems
- G & QG Authorities
- Trade Associations
- Insurers
- Supply Chain Actors
- Shippers
- Banks
- Ports & Terminals
- Freight Forwarders
- Port & Terminal Operating Systems

<<Network>>
PPlatform

- BNP PARIBAS
- Bank of America
- UBS
- Port of Rotterdam
- SIPC
- MPA Singapore
- XPO Logistics
- "J.R. HUNT" Inc.
- DHL
- UPS
- DB SCHENKER
- KUEHNE + NAGEL
- EXPRESS AIR CARGO
- DERINGER
- FedEx
- MAERSK
- CMA CGM
- DEUTSCHE POST
- SAP
- ORACLE
- AXA
- Allianz
- U.S. Customs and Border Protection
Governance Model: Structure and Envisioning Evolution Model

Governance Model Structure

Mandate of the Entity / Entities

- Set Rules, Create Use case / Biz model

Operator

Develop / Operate Blockchain

Governance Model Evolution (example)

Founder-led

- Founder
- Member

Streamlining / Delegation

- Founder
- Board
- Alliance Partner
- Member

Expand Network

- Founder
- Board
- Alliance Partner
- Mem ber
- Associate

- Usually contractual based
- Alliance Partner helps onboarding, operation
- Create Entity
- Apply associate membership for another industry members
Advanced tooling allows you to quickly build, operate and grow blockchain networks.

Open technology uses the popular Hyperledger Fabric distributed ledger.

Deploy anywhere fully managed, or flexible deployment on-premises or on other cloud vendors.
Blockchain Engagement Journey

**Discover**
- 1-3 days
- Blockchain Education
- Use Case Validation
- Design Thinking Workshops
- Network Identification
- Requirements gathering

**Pilot**
- 6 – 9 Months
- Pilot – real transactions
- Legal entity setup and regulatory compliance
- Governance setup
- Funding model and Monetization policy
- Additional integrations to existing systems

**First Project**
- 4-12 weeks
- Minimum Viable Product
- Minimum Viable Ecosystem
- Business Value Assessments

**Production**
- 1 Year +
- Fully integrated solution processing real transactions providing real returns
- Member recruitment
- Application maintenance
- New feature releases
- Cross-network interoperability

**Scale**
- Live growing network providing real returns
- Membership recruitment
- New technology integrations and further interoperability

- Identify Key Areas, Regions
- Currently CSR does some blockchain pilot in Education
- IBM also does commercial business with NPO (e.g. Plastic Bank, Sovring foundation)
Why IBM

Security at Scale
Enterprise-grade security and control on a platform where businesses and industries are reinventing themselves.

Trusted Expertise
Reinventing business processes through unrivaled industry and technical knowledge as you start, accelerate and innovate your blockchain network.

Network Convening Power
Bringing together an expansive partner network of innovators, regulators and suppliers to establish, join or run your blockchain network.
Thank you!
ryotaro@jp.ibm.com
Introduction

Ryotaro Sekine, Associate Partner at IBM Business Strategy Consulting

- More than 13 years of consulting experience in wide variety of industry and expertise, focusing on digital business strategy and transformation enabled with advanced technology such as blockchain, AI/IOT, Analytics, Digital Marketing in cross boarder environment.
  - **Expertise:** Digital Business Strategy, Blockchain Strategy, AI/IOT Strategy, New Business Development, Organizational Transformation, Large Scale IT project management etc
  - **Industry Experience:** High-tech, Media, Internet, Education, Aviation, Telecom, Utility, Chemical, Financial Institute
- Lecturer at Keio Business School (EMBA/MBA) on “Digital Technology and Management”
- **Academic Record:** M.S in Physics at Waseda University (Japan)
- **Article on IBM THINK Business:**
  - Digital Reinvention of Media Industry
  - Solving Digital Divide with technology
- **Linkedin:** https://www.linkedin.com/in/ryotaro-sekine-0831583a/
- **Project Example:**
  - Japanese Electronics manufacturer: Digital Biz Strategy in the U.S and EU
  - U.S Internet Company: Digital Marketing Strategy in Japan
  - Japanese Utility Company: New biz development with power line communication
  - Japanese Electronics Manufacturer: [Blockchain Biz strategy in the U.S](https://www.ibm.com/think/jp-ja/business/technology-for-developing-countries/) and alliance creation
  - Korean Entertainment Company: Blockchain Biz Strategy in music industry
  - Japanese Semiconductor manufacturer: AI/IOT Strategy
  - Japanese Auto OEM: [R&D Blockchain use case development](https://www.ibm.com/think/jp-ja/business/technology-for-developing-countries/)
  - Japanese Medical equipment manufacturer: Future Business Strategy
  - Japanese Electronics manufacturer: China Market Entry Strategy
  - Japanese Aviation Company: New Biz Development in Agriculture
  - Japanese Electronics manufacturer: Organizational Transformation Strategy