Introduction to a Blockchain based trade platform

2 July 2020
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24 countries/regions in Blockchain Center of Excellence

Unity in Diversity

Social Infrastructure

Technology Foresight
NTT DATA: Blockchain Leader

Highly evaluated reports from several research companies

Avasant Report

Avasant has recognized 16 top tier providers supporting the enterprise adoption of blockchain.

- LEADERS: Accenture, IBM, LTI
- INNOVATORS: Capgemini, Cognizant, HCL, Infosys, TCS, Wipro
- DISRUPTORS: Mphasis, UST Global
- CHALLENGERS: Hexaware, Zensar

Refs: Blockchain Services RaderView 2018 (July 2018)

Everest Group

Everest Group PEAK Matrix™ Assessment 2019

- Leaders: IBM, Accenture
- Major Contenders: TCS, Infosys, Wipro
- Aspirants: NTT DATA

Refs: Blockchain Services PEAK Matrix™ Assessment 2019
What is TradeWaltz?

TradeWaltz is a cross-industry business trading platform built on the benefits of blockchain technology. It provides a one stop platform for all industry players to increase efficiency and optimize the utilization of EPA/FTA between countries.

AS IS

Country A
- Shippers
- Logistic companies
- Banks
- Insurance companies

Country B
- Shippers
- Logistic companies
- Banks
- Insurance companies

Digitalization is limited to one industry. They need to re-type data and do other manual works when exchanging data with other industries.

TO BE

Country A
- Shippers
- Logistic companies
- Banks
- Insurance companies

Country B
- Shippers
- Logistic companies
- Banks
- Insurance companies

TradeWaltz

All players use the same trade platform, which increases efficiency.

Powered by blockchain
What is TradeWaltz?

Cross-Industry consortium (established 2017) for paperless international trade

<table>
<thead>
<tr>
<th>Participating Companies</th>
<th>(as of March. 2020)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banks</td>
<td></td>
</tr>
<tr>
<td>MUFG Bank, Ltd.</td>
<td></td>
</tr>
<tr>
<td>Sumitomo Mitsui Banking Corporation</td>
<td></td>
</tr>
<tr>
<td>Mizuho Financial Group, Inc./Mizuho Bank, Ltd.</td>
<td></td>
</tr>
<tr>
<td>Insurance Companies</td>
<td></td>
</tr>
<tr>
<td>Tokio Marine &amp; Nichido Fire Insurance Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td>Sompo Japan Nipponkoa Insurance Inc.</td>
<td></td>
</tr>
<tr>
<td>Mitsui Sumitomo Insurance Company, Ltd.</td>
<td></td>
</tr>
<tr>
<td>Cargo Owners</td>
<td></td>
</tr>
<tr>
<td>Sumitomo Corporation</td>
<td></td>
</tr>
<tr>
<td>Mitsubishi Corporation</td>
<td></td>
</tr>
<tr>
<td>Sojitz Corporation</td>
<td></td>
</tr>
<tr>
<td>Toyota Tsusho Corporation</td>
<td></td>
</tr>
<tr>
<td>Marubeni Corporation</td>
<td></td>
</tr>
<tr>
<td>Itochu Corporation</td>
<td></td>
</tr>
<tr>
<td>Kanematsu Corporation</td>
<td></td>
</tr>
<tr>
<td>Mitsui &amp; Co., Ltd.</td>
<td></td>
</tr>
<tr>
<td>Carriers / Logistcs Companies</td>
<td></td>
</tr>
<tr>
<td>Kawasaki Kisen Kaisha, Ltd.</td>
<td></td>
</tr>
<tr>
<td>Nippon Express Co., Ltd.</td>
<td></td>
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<tr>
<td>Nippon Yusen Kabushiki Kaisha</td>
<td></td>
</tr>
<tr>
<td>Ocean Network Express Pte. Ltd.</td>
<td></td>
</tr>
<tr>
<td>Secretariat</td>
<td>NTT DATA</td>
</tr>
</tbody>
</table>

**Activities (2017)**

- Identification and sharing of cross industrial business issues
- 55 features, 83 API builds
- Proof of concept with NTP Singapore

**Activities (2018)**

- Research on AI and semantic technology for L/C document check
- Proof of concept in Japan and Thailand
- Research on relevant laws (MLETR) and submission of written request to government agencies

**Activities (2019)**

- Release of pilot version
- Trial deployment in Thailand involving 24 companies

**Activities (2020)**

- Exposure at World Economic Forum 2020 sideline event
- Preparation for full commercialization
Goals of TradeWaltz: Create an ideal digital trade platform

1. Cross Industry Platform
   Players:
   - Exporter
   - Negotiation Bank
   - Issuing Bank
   - Importer
   - Insurance Company
   - Forwarder
   - Carrier
   - C/O provider

2. Wide coverage of documents
   Structured documents (NOT PDF) on the platform
   - Letter of Credit
   - Invoice
   - Sea Way Bill
   - Packing list
   - Shipping Instruction
   - Export Permit
   - Certificate of Origin
   - Bill of Exchange
   - Insurance Policy
   - And attachment files (PDF etc.)

3. Creation of ecosystem
   Utilize the accumulated data stored in the trade platform to create new business ecosystem.
In the COVID-19 pandemic, digitalization is needed more than ever before. Digitalization of trade procedures has many benefits as follows:

- **Cost reduction and increase in operational efficiency**
  - Reduce the costs of keeping paper in the storage and cut the delivery cost of paper.
  - Prevent incorrect data entry by introducing system check.
  - Make it easier to input data and modify documents by reusing already inputted data in the previous transactions.

- **Prevention of illegal acts**
  - Prevent double financing by managing the financing status on the platform.
  - Protect documents from falsifying/tampering by using blockchain technology to ensure document originality and access control features to restrict document sharing.

- **Simplifying data management**
  - Simplify data management by accumulating data on the platform with high level of security.

- **Other benefits**
  - Maximize the benefits of FTA/EPA with the traceability features on the platform which ensures certificate of origin.
Benefits of Trade Digitalization

Based on the result of the cross-industrial POC in Japan, TradeWaltz confirmed that it contributes to the improvement of operational efficiency and cost reduction.

<table>
<thead>
<tr>
<th>Industries</th>
<th>Procedures</th>
<th>Contribute to Cost Saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cargo owners</td>
<td>C/O application</td>
<td>60+% Time saving by creating documents with I/V data</td>
</tr>
<tr>
<td></td>
<td>Apply for negotiation of documentary bill</td>
<td>60+% Time saving by confirming integrity of documents with check function</td>
</tr>
<tr>
<td>Banks</td>
<td>Negotiate documentary bill</td>
<td>60+% Time saving by confirming integrity of documents with check function</td>
</tr>
<tr>
<td></td>
<td>Deliver documentary bill</td>
<td>30 to 60% Time saving by delivering documents to customers</td>
</tr>
<tr>
<td>Insurance Companies</td>
<td>Issue insurance policy</td>
<td>30 to 60% Cost saving by managing original documents</td>
</tr>
<tr>
<td>Carriers/Logistic Companies</td>
<td>Issue SWB (B/L)</td>
<td>60+% Time saving by creating I/P with L/C data</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60+% Cost saving by paperless policy delivery/management and collection cost saving when revising I/P</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60+% Reduction of B/L operation by paperless SWB(B/L)</td>
</tr>
</tbody>
</table>
Based on the result of the PoC with Thailand stakeholders, TradeWaltz proved it does not only reduce cost, but also **prevent double financing**.

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**Double Financing Check Scheme**

1. Apply P/O finance
2. Check double financing
3. Financing
4. Reapply P/O finance
5. Check double financing
6. Reject financing

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**Benefits of Trade Digitalization**

- **Reduce 60%+ cost**
- Prevent double financing
Our initiatives in ASEAN countries

July to October 2019, we conducted trial activity in Thailand with 24 companies.

Hironari Tsuchiya, President and CEO of NTT DATA Thailand, said the benefits of using electronic documents for International trade were examined by 47 trial participants from 24 cross-industry companies including Thai bank, for trade finance operations. NTT DATA for origin providers and importers.

Trade documents such as air waybills, certificates of origin and trade finance documents were utilized for the trial.

"Production costs and time to complete document processing were significantly decreased; information shared to prevent the illusion of information sharing from multiple parties" a company planning a joint venture with local partners.

In 2017, NTT DATA also conducted a cross-industry collaboration with local insurance companies. The project shared a mutual interest in the ASEAN Region, aiming to promote digital transformation.
We think digital trade platform should comply with the following requirements.

- **Interoperability with other platforms**
  - To ensure interoperability and connectivity with players using other platforms.
  
  *We comply with UN/CEFACT message format.*

- **Small and Medium Enterprises involvement**
  - To include small and medium-sized companies as well as large enterprises

- **Independent business operation for every participating country and fairness in data governance**
  - To create an independent business development and operation according to each country’s market needs and to enable fair data governance where the ownership of data is not limited to big players.
TradeWaltz Initiatives in ASEAN: Exposure at WEF 2020 sideline event

In addition to digitalization, a trade platform should emphasize the importance of interoperability with different platforms. For this reason, we are working with International Chamber of Commerce (ICC) and Singapore’s Infocomm Media Development Authority (IMDA) and conducted a signing ceremony highlighting the importance of interoperability between platforms, on the sideline event of World Economic Forum (WEF) 2020.

International partners ink pact with IMDA to collaborate on digital trade

THE International Chamber of Commerce (ICC) and 17 major multinational firms have signed a cooperation agreement with Singapore’s Infocomm Media Development Authority (IMDA) to boost Singapore’s TradeTrust platform.

Signed at Davos on Wednesday, the agreement will lead to the development of a new blockchain-based system for world trade. Singapore will work with its partners to adopt open and neutral standards to ensure interoperability.

Moving towards digitalization, traditional trading system, and interoperability, noted Minister for Communications and Information, S. Iswaran, at the International Digitalisation Forum. The forum, attended by TradeTrust members, emphasized the importance of interoperability, allowing digital trade documents to be shared across different platforms.
TradeWaltz enables API connectivity with the companies’ existing system. Small and medium-sized enterprises can also connect to TradeWaltz through the 3rd party vendor or direct access to web interface.
TradeWaltz realizes independent business development and operation which satisfies each country’s market needs. It also enables the fairness in data governance where the ownership of data is not limited to specific players.
Category of Trade Platforms

There are many trade platforms, but most of them have issues. TradeWaltz architecture solves those issues with “Hybrid” model.

<table>
<thead>
<tr>
<th>Centralized</th>
<th>Hybrid Centralized - P2P</th>
<th>Pure P2P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>![Centralized Diagram]</td>
<td>![Pure P2P Diagram]</td>
</tr>
<tr>
<td>• One owner</td>
<td>• One owner for each country.</td>
<td>• All participants are owner (Nodes investment are required to participate.)</td>
</tr>
<tr>
<td>• All participants (countries) access the same data center in a specific country.</td>
<td>• Data are stored and managed in each country.</td>
<td>• Data are stored and managed by every participant.</td>
</tr>
<tr>
<td>• Need to make consensus of where data center to be located.</td>
<td>• Independent platform business in each country is possible.</td>
<td></td>
</tr>
</tbody>
</table>
Benefits of hybrid centralized architecture:
• Neutral platform can be used by everyone
• Costs are shared to all users thus cheaper
• Easier operation and maintenance
• Lower risk of channel explosion
• Data accumulated in one entity, easier to utilize for big data etc.
Issues and limitations of Blockchain Technology

Every blockchain platform has strength and weakness, that can be challenging to adapt in trade platform.

Data management related issues

**Data Explosion**
Past information can not be deleted
→ Data capacity continues to expand

Depending on the range of target data traceability, data explosion deteriorates further
(Attachment file etc.)

**Erasability of Personal Data**
Difficult to control and deleting personal information related such as GDPR.

Network related issues

**Channel Explosion (Fabric)**
Access control by channel
(Explosion from combination of up to 200 countries)

Channel définition, chain code arrangement for channels, data capacity, performance, etc.

**Transaction Explosion (Corda etc.)**
Transactions for sharing increase sharply as number of trading participants increase

When we control data access for up to 200 countries, the number of combination will be massive.
NTT DATA's trade platform provides a mechanism for data to be shared only between relevant country in consideration of data sovereignty.

The data on the blockchain is only for the control section (hash). It is not possible to refer to detail contents of the documents.
Legal challenge

**UNCITRAL Model Law (MLETR)**

(+): Aims to enable the legal use of electronic transferable records both domestically and across borders.

(-): Individual states will have to decide whether to adopt the MLETR into their own law.

**Electronic seal scheme from eIDAS**

(+): The electronic seal is a piece of data attached to an electronic document or other data, which ensures data origin and integrity.

(-): Only applicable in EU. Similar scheme applicable worldwide is necessary.

LEGAL FRAMEWORK
TradeWaltz will start commercial service in 2020 and gradually expanding its services.

1. **Start service - 2020**
   - Expand users: consortium members, third party, MSME, others.
   - Expand services; introduce new features gradually.

2. **Connect to Japanese Single Window**
   - 100% paperless trade

3. **2020~**
   - Connect to overseas platform
   - ASEAN RDTC, Thailand, Singapore, etc.

4. **100% paperless trade**

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• TradeWaltz web site

• TradeWaltz introduction video
https://www.youtube.com/watch?v=y_-d9DBM0CQ