Breakout Session 2
6th WCO TI Forum

NTT DATA
Global IT Innovator

AI and Cloud : Taking Trade and Logistics to a New Stage

Nov. 1st
Takayuki Kida
NTTDATA Corporation

Agenda

I. Overview and Experience of NTTDATA

II. AI Based Risk Management Solution

III.B to B Trade Cloud

NTT DATA

Overview and Experience of NTTDATA

NTT DaTa

Fact Figure of NTT DATA (as of March 31, FY17)

ESTABLISHED BY GOVERNMENT

- **Part of NTT Group: the largest telecommunications provider in Japan**
- **Originally a public company, privatized in 1985**

GLOBAL TOP 9 SYSTEM INTEGRATOR

- **The largest System Integrator in Japan**
- **Global Top 9 System Integrators**

🌐 Sales Figure and Financial Situation

Net Sales	USD **15.4** billion
Operating Income	USD **1.0** billion
Total Assets	USD **19.9** billion

(1USD=112JPY)

NTT DATA

Our Experience in Asia

Japan (NACCS)   **39 years since 1978**

1978	Customs clearance system started
1991	Risk management system started
1997	Single Window started

The most Cutting-Edge System in the world
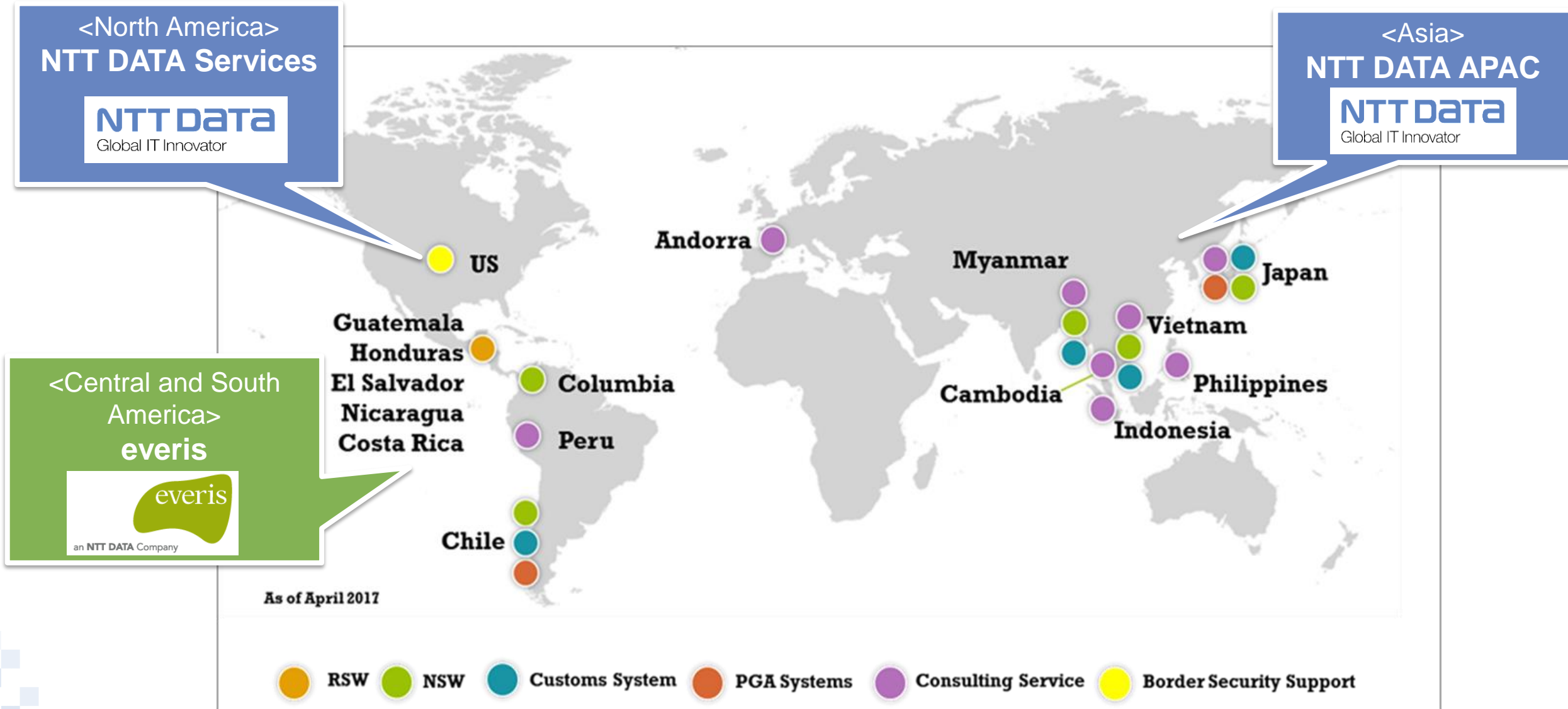
Leveraging expertise gained in Japan
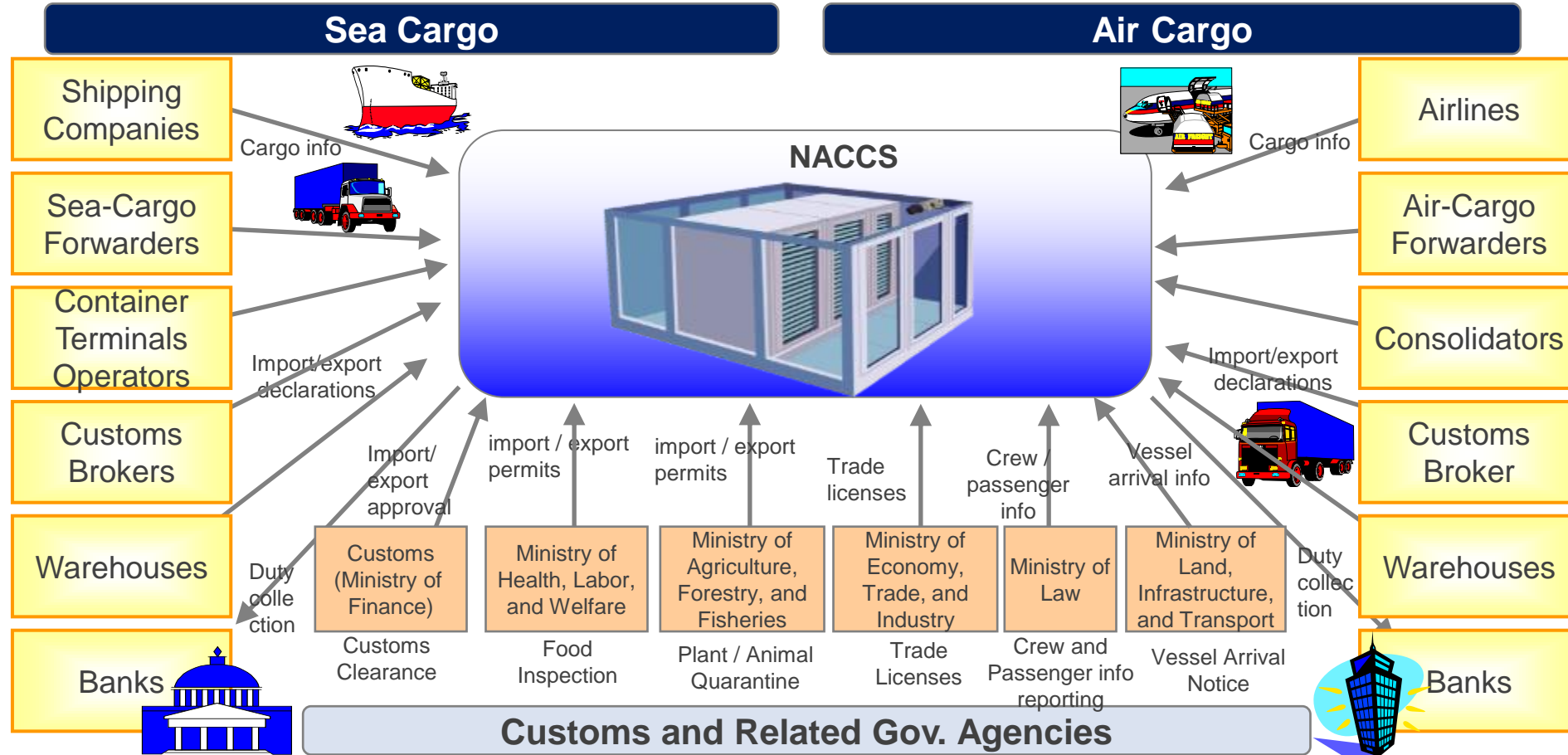
1. Vietnam (VNACCS)

April, 2014 –

2. Myanmar (MACCS)

Nov, 2016 –

NTT DaTa

Our Global Coverage in Customs and Trade

<North America>
NTT DATA Services

<Asia>
NTT DATA APAC

<Central and South America>
everis

Andorra

US

Guatemala
Honduras
El Salvador
Nicaragua
Costa Rica

Columbia

Peru

Chile

Myanmar

Vietnam

Cambodia

Philippines

Indonesia

Japan

As of April 2017

RSW | NSW | Customs System | PGA Systems | Consulting Service | Border Security Support

NTT DATA

Our Experience: NACCS

Sea Cargo | **Air Cargo**

Sea Cargo side:
- Shipping Companies
- Sea-Cargo Forwarders
- Container Terminals Operators
- Customs Brokers
- Warehouses
- Banks

Cargo info — Import/export declarations — Import/export approval — Duty collection

NACCS

Air Cargo side:
- Airlines
- Air-Cargo Forwarders
- Consolidators
- Customs Broker
- Warehouses
- Banks

Cargo info — Import/export declarations — Duty collection

Flows into NACCS:
- import / export permits
- import / export permits
- Trade licenses
- Crew / passenger info
- Vessel arrival info

Customs and Related Gov. Agencies

Customs (Ministry of Finance)	Ministry of Health, Labor, and Welfare	Ministry of Agriculture, Forestry, and Fisheries	Ministry of Economy, Trade, and Industry	Ministry of Law	Ministry of Land, Infrastructure, and Transport
Customs Clearance	Food Inspection	Plant / Animal Quarantine	Trade Licenses	Crew and Passenger info reporting	Vessel Arrival Notice

Fully Automated **Public and Private use jointly** **Single Window** **99.99% Availability 24h 365d operation**

NTT DaTa

Benefit of NACCS

168.2 hour (nearly7.0days)

Average time required for import procedure reduces to nearly **1/3** in 20 years.

59.5hour (nearly2.5days)

Year	Declaration - Permission	Carry cargo into warehouse - Declaration	Arrival in port - Carry cargo into warehouse
Feb,1991	26,1	94,5	47,6
Feb,1992	19,8	84,9	45,2
Mar,1993	13,1	63,7	39,4
Mar,1996	10,2	49,5	35,4
Mar,1998	5,6	46,0	35,1
Mar,2001	4,9	37,8	31,1
Mar,2004	4,3	36,8	26,0
Mar,2006	3,3	33,7	26,8
Mar,2009	3,1	33,0	26,3
Mar,2012	2,6	31,2	27,0
Mar,2015	2,4	30,4	26,7

Legend:
- Arrival in port - Carry cargo into warehouse
- Carry cargo into warehouse - Declaration
- Declaration - Permission

Today's Topics

Recent Trend

Increase Significance of Risk Management

Needs: More efficient risk management process and more accurate risk detection

Facilitation in total process of trade

Needs: Easy and streamline communication within private users

NTT DATA's New Solutions

For Governments

AI Based Risk Management

For Private Sectors

B to B Trade Cloud

B2B
TRADECLOUD

NTT DaTa

AI Based Risk Management Solution

NTT DaTa

1. Challenges of Customs Officers in Risk Management

Environment Surrounding Customs

Challenges of Customs Officers

Increase of terrorism	→	**Strengthen Enforcement on suspicious/dangerous goods**
Increase of cargo due to E-commerce	→	**Increase efficiency of Customs Clearance**
Increase burden of Customs Officers	→	**Expand know-how of officers**
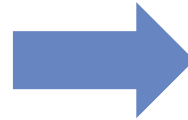
Need to deal with these challenges immediately otherwise…

➢ Inflow illegal goods into the country

➢ Missing collection of customs duties

➢ Increase time and cost in customs clearance

➢ Further Increase of burden

NTT DaTa

Time consuming to plan based on previous action

PLAN

<Establishing the context>
-Establish the context and plan of risk management based on past clearance data and risk information.

<Risk Treatment>
-Physical Inspection of cargo
-Use risk information to the next screening
-Do post clearance audit based on the result.

Risk Management

ACTION

DO

AI based risk management supports RM PDCA cycle

<Risk Assessment / Risk Identification>
-Make and set screening criteria based on the plan
-Screen and extract data that have risks

Limit of risk analysis by human

CHECK

<Risk Analysis / Risk Evaluation & Prioritization>
-Analyze screening result and check the accuracy

Increase burden of officers

AI based Risk Management Solution

5 **Suggest risks by Category**

Government Officer
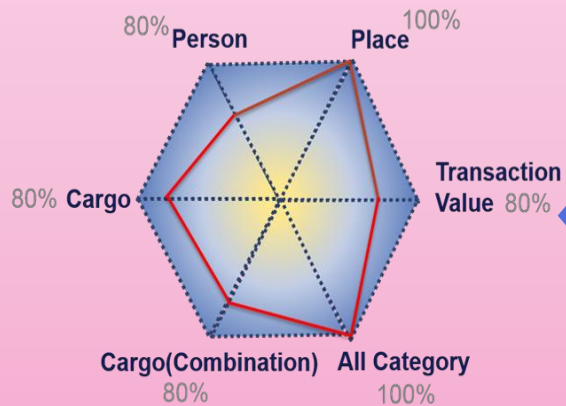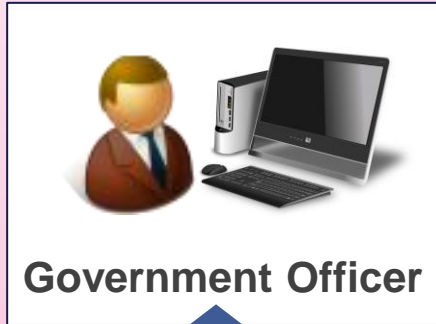
1 **Send Clearance Result from Clearance system**

6 **Register Screening Result**

Machine Learning

2 **Update Database**

Risk Management Database

AI

3 **Generate Models**

Screening Result

4 **Screening & Selectivity by AI**

7 **Risk Analysis**

80% Person — Place 100%
80% Cargo — Transaction Value 80%
Cargo(Combination) 80% — All Category 100%

Screen Image 1: Screening of new declaration

Selectivity Result for Declaration No. 20000410550

Declaration No. 20000410550

Result By Human
☺No problem

Result By AI
🤖Red / 88.73

GREEN   YELLOW   RED

Answer Green/Yellow/Red

Suggest risks by radar chart, by category

NTT DaTa

Screen Image 2: Risk Analysis

By period (Complete declaration)   nttdata

Specify the period for past data.

2017-01-01   -   2017-03-31

Specify the channel for past data. ☺

○ Red
○ Yellow
◉ Green
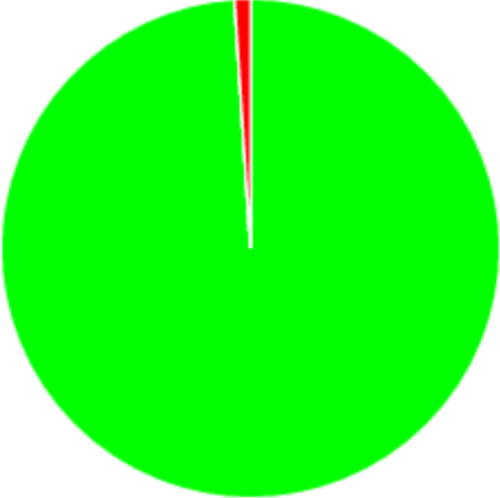
EXECUTE

Selecitivity Result By AI Between 2017-01-01 and 2017-03-31 for Green Channel

■ Green ■ Yellow ■ Red

Specify the period for past data and the selectivity channel **by Rule**

From all the target data, **AI engine** routed some to **Red and Yellow**

NTT DaTa

Screen Image 2: Risk Analysis

4. Benefit of our Solution

Show risk suggestion graphically by category

Screening engine that officers can know its cause of decision

Specific screening points are weighted and can customized

Governments can keep security and confidential data within the country

Can integrate with existing customs system

Can start from POC using the real data

NTT DATA

AI X-ray Image Detection Solution

High-speed, high-precision image recognition
with deep learning AI contributes to reducing inspection time
by efficiently detecting disparity from X-ray images

**Image recognition during X-ray inspection
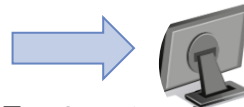Detect efficiently by AI**

TO-BE

AI X-ray Image Detection

Check detection result by AI

AS-IS

Check the contents visually

Customs Officers

目視によるチェック

By extracting local features of images by deep learning, it is possible to detect objects at high speed and with high accuracy
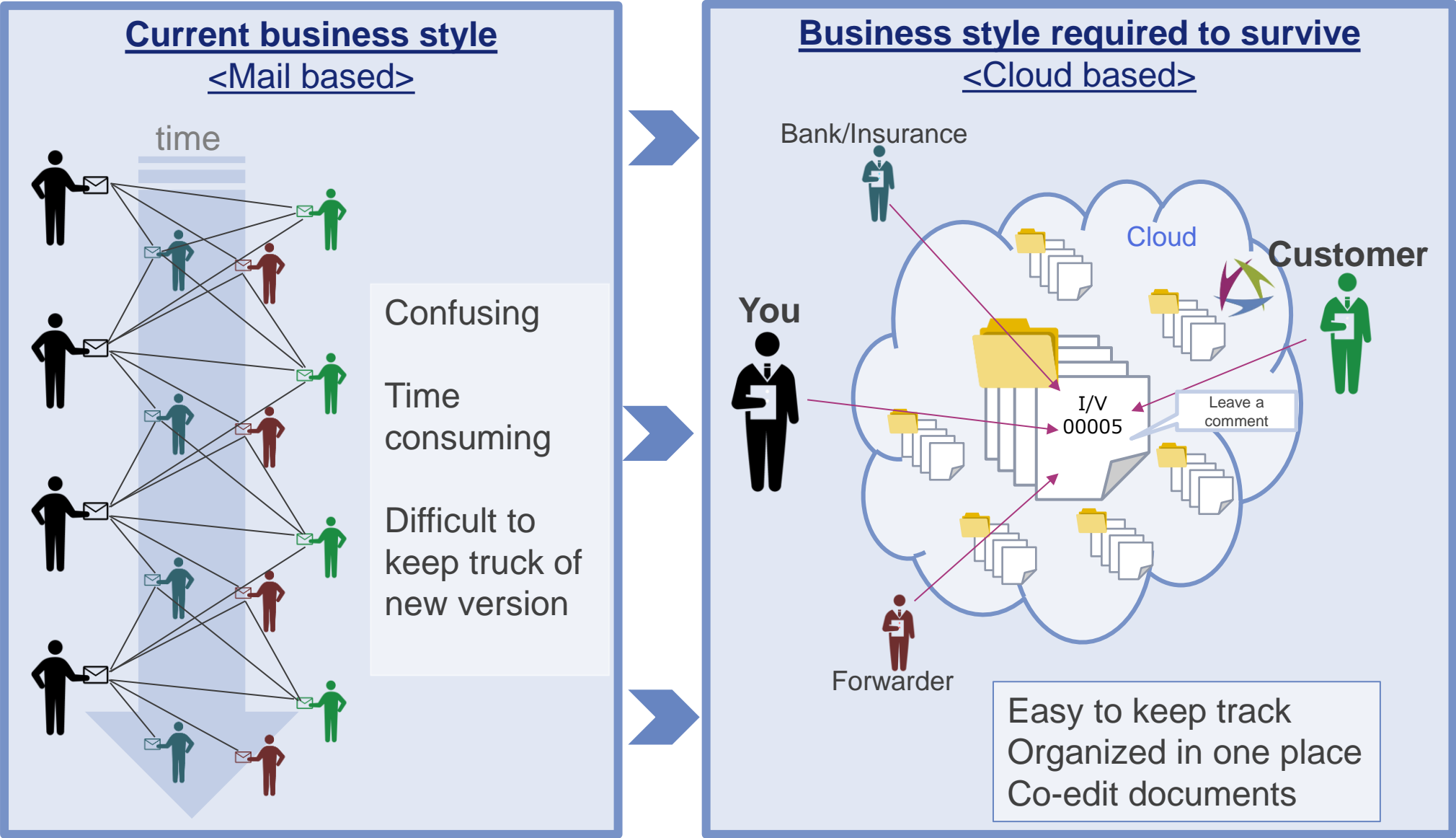
NTT DaTa

B to B Trade Cloud

NTT DATA

For advanced logistics management and communication

1. Open platform strategy: Tracking

2. Government to Government connection

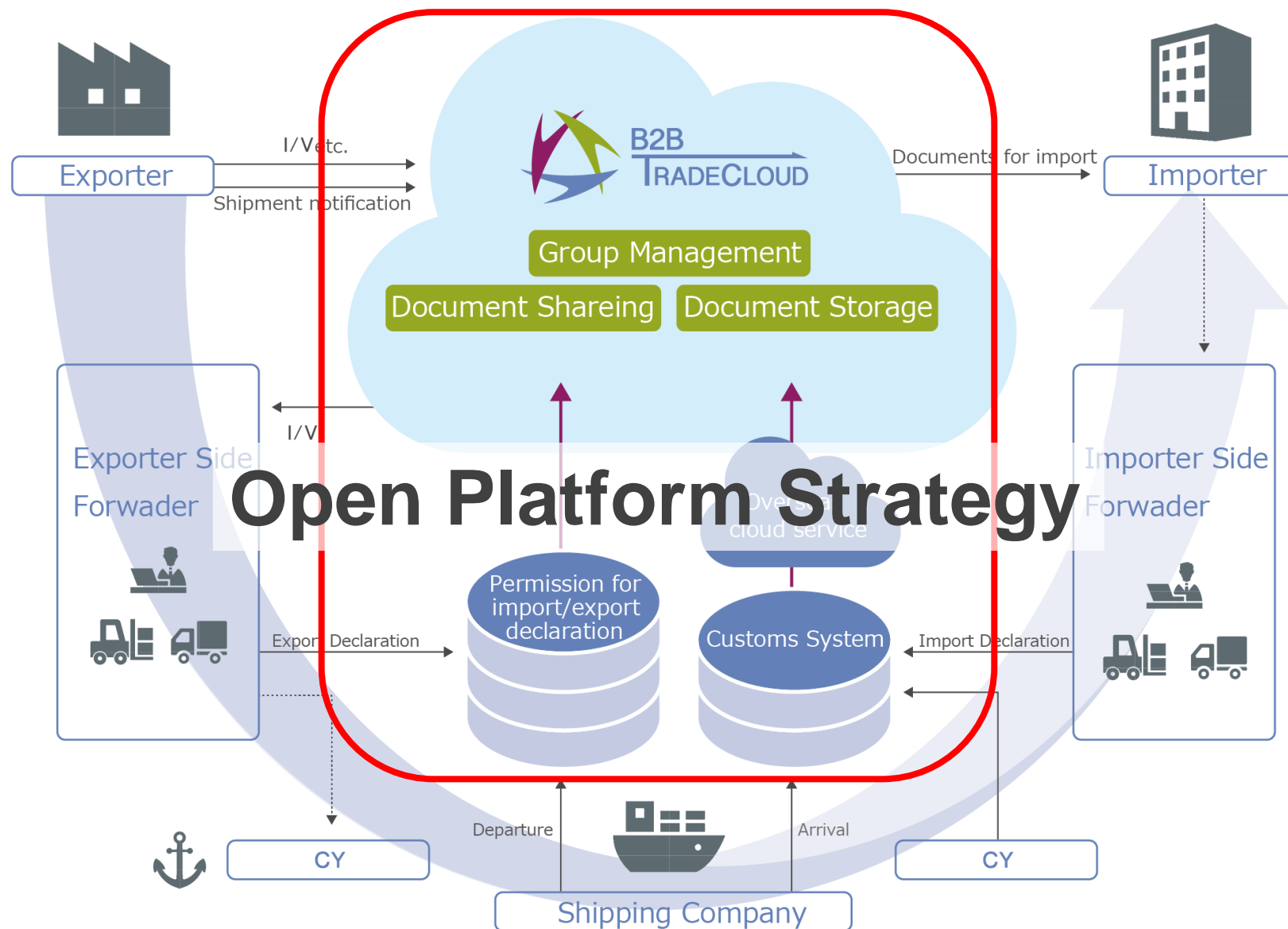# B2B TradeCloud: Trade document sharing platform on CLOUD

Current business style
<Mail based>

time

Confusing

Time consuming

Difficult to keep truck of new version

Business style required to survive
<Cloud based>

Bank/Insurance

Cloud

Customer

You

I/V 00005

Leave a comment

Forwarder

Easy to keep track
Organized in one place
Co-edit documents

Security
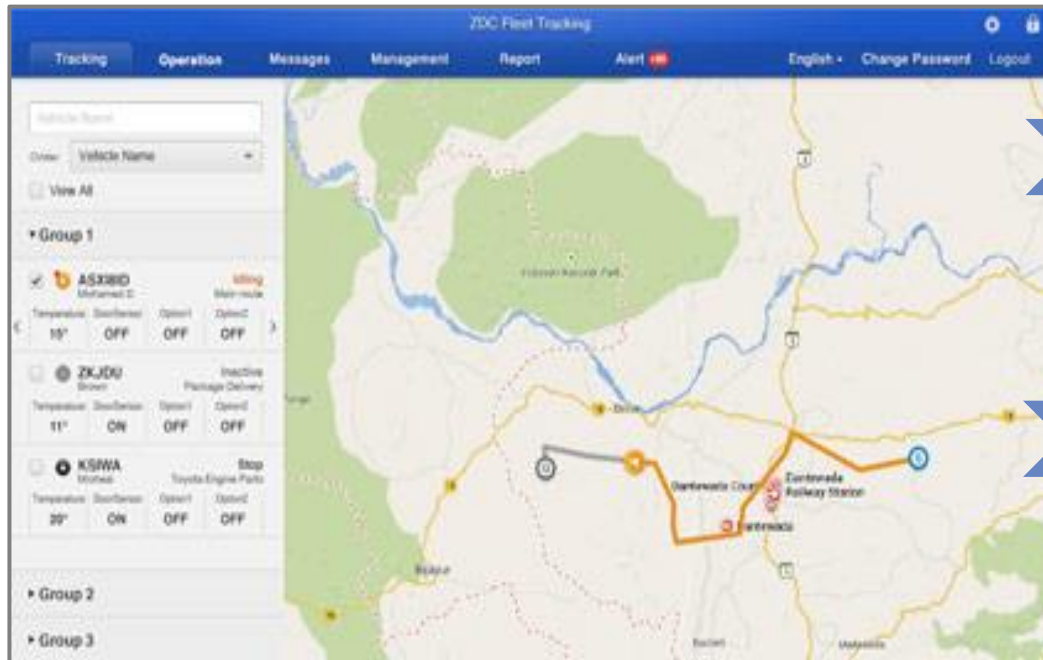
Efficiency

History

Audit

NTT DaTa

B2B TradeCloud: Open platform

NTT DaTa

Strengthen trade operation by IoT

B2B TradeCloud is a cloud service which supports the management of information (logical) and tracking information(physical) across borders.
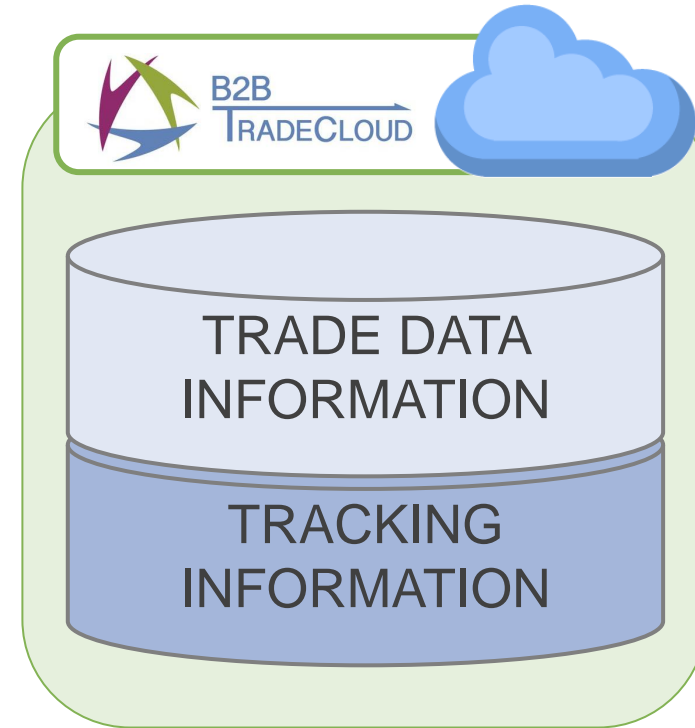

1.Performance
- Time & Location

2. Alert
- Irregular action

B2B TradeCloud

TRADE DATA INFORMATION

TRACKING INFORMATION

Benefits
- Concrete performance analysis and afford sheer improvement cycle
- Quick response to irregular case with clear view of document & delivery

Combination of G-B-B-G

The following formation of G-B-B-G will also enable efficient use of trade information.

Country A

Country B

G

G

Access control

Access control

B

B

Share and reuse information
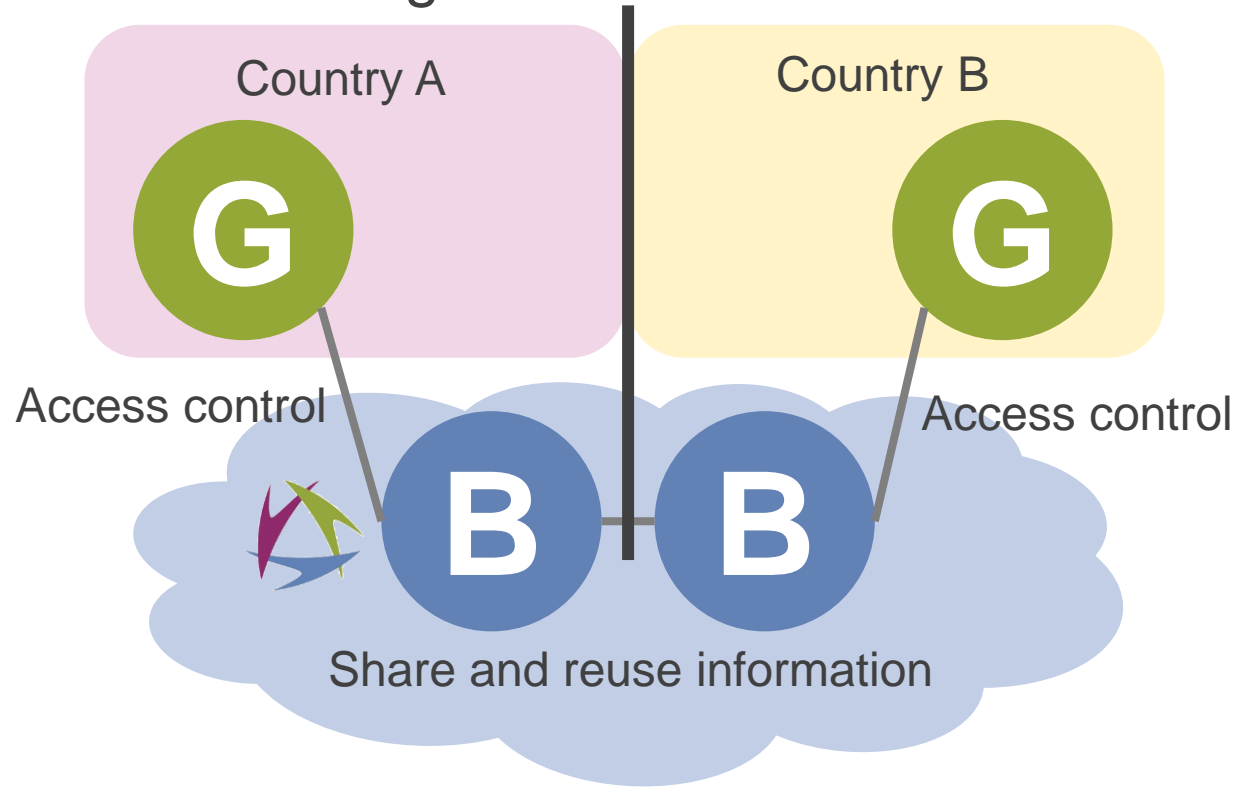
- Efficient use of information speeds up the operation

- Less mistakes in documents

B2B support transmitting necessary information between G-G

NTT DaTa

Thank you for your attention.

NTT DATA Corporation
http://www.nttdata-trade-facilitation.com/
Email: bmot_marketing@kits.nttdata.co.jp

Exhibition booth: #9&10

NTT DATA