APEC Supply Chain Visibility Feasibility Study
Public Management Consulting Department
Takeshi Morikawa
8th May 2013
1. Outline of this project

2. Result of Questionnaire survey

3. Result of The pilot project

4. SCV Work shop

5. APEC Recommendation for SCV
1. Outline of this project:

Supply Chain Visibility Initiative

CY 2010
CY 2011
CY 2012
CY 2013

CY 2010 Japan
CY 2011 U.S.
CY 2012 Russia

SCV Feasibility Study Phase 1~3

1. SOM1
   - APEC ICT Global Value Chain Workshop

2. SOM2
   - Supply Chain Connectivity Framework, CTI

3. SOM3
   - Supply Chain Visibility Workshop, SCSC
   - Supply Chain Connectivity Action Plan, CTI

1. Phase 1 Questionnaire survey (APEC funding)

2. Phase 2 Pilot project (Self funding)
   Establish best practices

3. Phase 3 Workshop (APEC funding)
   APEC recommendation

Based on “APEC Supply Chain Connectivity Framework Action Plan for Chokepoint 6”

1. Strengthen business competitiveness
2. Reduce the burden on the environment
3. Achieve both security improvement and trade facilitation
2. Result of Questionnaire survey

Collection Result

- It is difficult for shippers and/or consignees to control the process of supply chain in current status of international logistics since a great number of entities are involved in the transport process.

- A questionnaire survey was conducted to grasp the currently adopted information types, coding systems, and internal systems at some major logistics sites in each entity in APEC region.

- As for the collection result of the questionnaire:
  - shipper/consignee and forwarder; 23 affairs,
  - shipping company and container terminal; 20 affairs,
  - the customs; one affair.

- The reply was obtained from 9 economies of APEC.
2. Result of Questionnaire survey

The truck arrival to a container terminal is most useful information at Export process

Most useful information at Export process is the truck arrival to a container terminal and to a warehouse, the complete loading on a ship at container terminal, and the ATD (Actual time of departure) of vessel from container terminal.

Figure Container Movement for Export

Figure Contents of the ideal information items

Container status of Export: All

ATA and arrival and departure of Container Terminal are important at Import process

Most useful information at Import process is the ATA (Actual time of arrival) of vessel to a container terminal, the truck arrival to a container terminal and the truck departure from a container terminal.

Figure Container Movement for Import

Figure Contents of the ideal information items
Container status of Import: All
Most useful Search key for container status information is Container number with Booking number or Bill of Lading number. Same result can show you at not only Port to Port but also Door to Door.
Table: Outline of Japan/China pilot project

| Executor | Nippon Express Group (Japanese Forwarder)  
SIPG (Shanghai International Port (Group)) |
|----------|----------------------------------------------------------------------------------|
| Trade lane | Shanghai port (China) to Hakata port (Japan)  
Shipping company: SSE (Shanghai Super Express) |
| Cargo owner | Precision equipment manufacturer, Consumer-goods trading company, NVOCC(Nippon Express) |
| Major objective | Sharing the visibility information which is captured from Terminal Operation System and Automated Data-capturing system(RFID) at Shanghai and Hakata, and stored in EPCIS |
| System configuration | 1) EPCIS Repository  
2) EPCIS Accessing Application  
3) EPCIS Capturing Application  
4) Tracking information input  
- Terminal operation systems & RFID (2.45GHz) system |

NVOCC: NON VESSEL OPERATING COMMON CARRIER  
EPCIS: EPCIS is an EPCglobal standard designed to enable Electronic Product Code (EPC) data sharing within and across enterprises.  
(http://www.gs1.org/gsmp/kc/epcglobal/epcis/)
The pilot project is conducted by using international container cargo between Japan and China. The project starts from shipper’s factory to consignee’s warehouse which includes all entities of supply chain, and implements from 2011 Dec. to 2012 Mar.
### 3. Result of The pilot project

**Expected impact from pilot project**

<table>
<thead>
<tr>
<th>Present problem</th>
<th>Result of Pilot project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Increase in efficiency of inquiry response</strong></td>
<td><strong>By use of a shared pilot information system, information sharing of the persons concerned becomes possible, and an inquiry reduces them.</strong></td>
</tr>
<tr>
<td>Inquiry response using a telephone, FAX and e-mail such as the arrival to a container terminal at Export process, ATA and, arrival and a departure of Container Terminal at Import process.</td>
<td></td>
</tr>
<tr>
<td><strong>Minimum stock level reduction</strong> (Assume contingency of supply chain to avoid stock out situation)</td>
<td><strong>All of cargo between port of China side and the warehouse of the Japan side consignee's hand is considered as minimum stock by this system. Consignee can reduce minimum stock level.</strong></td>
</tr>
<tr>
<td>The cargo in the warehouse of the Japan side consignee's hand is considered as minimum stock.</td>
<td></td>
</tr>
<tr>
<td><strong>Reduction of lead time between complete unloading and customs clearance report</strong></td>
<td><strong>The information system which performs a customs clearance report automatically is developed. This system recognizes container unloaded completely from vessel by the RFID reader. The lead time reduction for an average of 1 hour is possible by this system.</strong></td>
</tr>
<tr>
<td>Lead time between complete unloading and customs clearance report is 2 to 3 hours.</td>
<td></td>
</tr>
</tbody>
</table>
# Outline of Work Shop

**Date:** 21 May 2012 (One day WS)

**Venue:** Kazan Russia

**Audience:** SCSC, SCCP, ECSG, TPTWG and various supply chain entities.

**Purpose:** Share the result of projects and discuss about the recommendations.

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# Work Shop Agenda

- **Introduction**
- **Session 1:** Report of Best practices
- **Session 2:** APEC Recommendation for Cargo Status Information Network for enhancing SCV
- **Session 3:** Harmonize with International-standard-making organizations
4. SCV Work shop

Objectives of SCV WS

Sharing the results of Best Practices
Sharing the APEC Recommendation

Moderator: Henri Barthel, Vice President, GS1 System Integrity
Organizer: Ministry of Economy, Trade and Industry, Japan

Speaker:
- Mr. Takashi OBAYASHI; Group General Manager, NIPPON EXPRESS Co., LTD. (Japan)
- Mr. Chun-Fu Lin; Specialist, Department of Investigation, Directorate General of Customs, Ministry of Finance (Chinese Taipei)
- Mr. K W Ho, Senior Industry Engagement Manager for Logistics of GS1Hong Kong (co-sponsoring economy: Hong Kong, China)
- Ms. Helena Chong Siew Ying; Deputy Director, Malaysian Communications and Multimedia Commission (Malaysia)
- Mr. Kim Soo Yeob; from Korean Maritime Institute (co-sponsoring economy: Korea)
- Mr. WU; from China (representative from Northeast Asia Logistics Information Service Network (NEAL-NET))
- Dr. Kenneth R. TRAUB; Independent Consultant, Ken Traub Consulting LLC of U.S
- Mr. Takayuki HIRABAYASHI; Deputy Director, the Ministry of Economy, Trade and Industry of Japan
- Mr. Dominique VANKEMMEL; Domain Coordinator Transport/Logistics, Trade and Transport Facilitation, CEFACT / United Nations
- Ms. Mariya Polner; Research Analyst, the World Customs Organisation
How to make APEC recommendation

In order to finalize APEC recommendation, reporting of best practices and sharing the Recommendation, harmonizing with International Standards are a required step.

Session 1: Report of best practices
- Japan
- Chinese Taipei
- Hong Kong, China
- Malaysia

Session 2: Toward the realization of SCV
- China (NEAL-NET)
- USA (Implementation)
- Japan (METI)

Session 3: Harmonization with International Standards
- WCO, UN/CEFACT, GS1
5. APEC Recommendation for SCV

Phase 3: Contents of APEC recommendation 1/2

This project will create a set of draft recommendation for member economies to establish common technical grounds for visualized, global supply chain in the APEC region.

1 Background and Objectives
   1.1 Current status of cargo status information sharing in APEC region
   1.2 Impact of cargo status information network on supply chain among APEC region

2 Ideal cargo status information network for enhancing supply chain visibility
   2.1 Ideal cargo status information network
   2.2 Scope of this recommendation

3 Necessary technology and Information sharing
   3.1 Information sharing
      3.1.1 Ideal cargo status information
           - Important information at trade process
           - Search Keys
      3.1.2 Cargo status event code scheme
   3.2 Visibility platform architecture [Ref. EPCglobal Architecture]
   3.3 Technological specifications
      3.3.1 Technologies for capturing data
      3.3.2 Database interfaces
      3.3.3 Application
4 Best practices of Supply Chain Visibility

4.1 Best practices 1 [Japan]
   4.1.1 Outline
   4.1.2 Practicality of supply chain visibility platform
   4.1.3 Verification of the effects of improvements in supply chain management

4.2 - 4.5 Best practice [Other economy] (Same Format as 4.1)

5 How to promote the implementation
   5.1 Implementation step
   5.2 Implementation method of cargo status information network

6 Future plan
   6.1 Realization of supply chain visibility in APEC region
   6.2 Collaboration with International-standard-making organizations
   6.3 Collaboration with other region
   6.4 Others

Based on the result of phase 2
1. Background and Objectives

1.1 Current status of cargo status information sharing in APEC region

1.2 Impact of cargo status information network on supply chain among APEC region

<table>
<thead>
<tr>
<th>Type of effect</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct effects</td>
<td>Reduction of queries</td>
</tr>
<tr>
<td></td>
<td>Process synchronization and automation</td>
</tr>
<tr>
<td></td>
<td>Reduction of risk of delays, etc.</td>
</tr>
<tr>
<td>Increased effectiveness</td>
<td>Greater frequency</td>
</tr>
<tr>
<td></td>
<td>Shorter lead times</td>
</tr>
<tr>
<td></td>
<td>Greater choice of logistics providers</td>
</tr>
<tr>
<td></td>
<td>Greater choice of ports/shipping routes</td>
</tr>
<tr>
<td></td>
<td>Consequent reduction of safety inventory levels</td>
</tr>
<tr>
<td>Effects of standardization</td>
<td>Batch development of logistical information systems to common specifications</td>
</tr>
<tr>
<td></td>
<td>Reduction of maintenance of master data for shipping routes</td>
</tr>
<tr>
<td>Creation of added value</td>
<td>Process innovation and creation of new business</td>
</tr>
<tr>
<td></td>
<td>Sustainable development (environmental measures)</td>
</tr>
</tbody>
</table>

Source: APEC Recommendation
5. APEC Recommendation for SCV

2. Ideal cargo status information network for enhancing supply chain visibility

2.1 Ideal cargo status information network
2.2 Scope of this recommendation
### 3. Necessary technology and Information sharing

#### 3.1 Information sharing

##### 3.1.1 Ideal cargo status information

##### 3.1.2 Cargo status event code scheme

- **Items to be shared**: What, When, Where, Why
- **Code Scheme**: What : Container No.  
  When : Coordinated Universal Time  
  Where (Location) : UN/LOCODE  
  Why (Cargo Status) : UN/Status Code
- **Search Key**: (Container No. + Booking No.) or B/L No.

#### Table Vessel and Container Status Data (Export)

<table>
<thead>
<tr>
<th>When</th>
<th>Where</th>
<th>Why</th>
<th>What</th>
<th>Importance</th>
</tr>
</thead>
<tbody>
<tr>
<td>YMD HHMMSS</td>
<td>Container Depot</td>
<td>Arrival</td>
<td>Truck</td>
<td>Middle</td>
</tr>
<tr>
<td>YMD HHMMSS</td>
<td>Container Depot</td>
<td>Departure</td>
<td>Container</td>
<td>High</td>
</tr>
<tr>
<td>YMD HHMMSS</td>
<td>On the road</td>
<td>On the way</td>
<td>Container</td>
<td>Low</td>
</tr>
<tr>
<td>YMD HHMMSS</td>
<td>Warehouse</td>
<td>Arrival</td>
<td>Container</td>
<td>High</td>
</tr>
<tr>
<td>YMD HHMMSS</td>
<td>Warehouse</td>
<td>Complete Stuffing</td>
<td>Container</td>
<td>High</td>
</tr>
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<tr>
<td>YMD HHMMSS</td>
<td>Container Terminal</td>
<td>Arrival</td>
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<td>High</td>
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<td>YMD HHMMSS</td>
<td>Container Terminal</td>
<td>ATA</td>
<td>Vessel</td>
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<tr>
<td>YMD HHMMSS</td>
<td>Container Terminal</td>
<td>Complete Loading</td>
<td>Container</td>
<td>High</td>
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<tr>
<td>YMD HHMMSS</td>
<td>Container Terminal</td>
<td>ATD</td>
<td>Vessel</td>
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</tr>
<tr>
<td>YMD HHMMSS</td>
<td>On Ocean</td>
<td>On the way</td>
<td>Vessel</td>
<td>Low</td>
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<tr>
<td>YMD HHMMSS</td>
<td>Next Port</td>
<td>ATA</td>
<td>Vessel</td>
<td>Middle</td>
</tr>
<tr>
<td>YMD HHMMSS</td>
<td>Next Port</td>
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<td>Vessel</td>
<td>Middle</td>
</tr>
<tr>
<td>YMD HHMMSS</td>
<td>Bonded Area</td>
<td>Bond transportation</td>
<td>Container</td>
<td>Low</td>
</tr>
<tr>
<td>YMD HHMMSS</td>
<td>Bonded Area</td>
<td>Customs Clearance</td>
<td>Container</td>
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<tr>
<td>YMD HHMMSS</td>
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<td>Complete Unloading</td>
<td>Container</td>
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<tr>
<td>YMD HHMMSS</td>
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3.2 Visibility platform architecture
3.3 Technological specifications
   3.3.1 Technologies for capturing data
   3.3.2 Database interfaces
   3.3.3 Application

http://www.gs1.org/gsmp/kc/epcglobal/epcis
4. Best practices of Supply Chain Visibility

4.1 Japan - China Container RFID Trucking System (Japan)

4.2 Japan – China Automobile RFID Tracking System (Japan)

4.3 Global Wine Supply Chain Visibility Project (Hong Kong)

4.4 The Security and Trade Facilitation System (Malaysia)

4.5 e-Seal Program in Chinese Taipei (Chinese Taipei)
5. How to promote the implementation

5.1 Implementation step
5.2 Implementation method of cargo status information network

NEAL-NET (North East Asia Logistics Information Service NET work)

http://www.nealnet.org/

Since December, 2010

CHINA

KOREA

JAPAN

Warehouse/Factory

Container Terminal

Vessel Schedule

Ocean Transportation

Road Transportation

Warehouse

Container Terminal

Step1

Step2

Step3

Container Status

Cargo Tracking

Road Transportation

Step1

Step2

Step3

Ocean Transportation

Road Transportation

Step1

Step2

Step3

Warehouse

http://www.nealnet.org/
6. Future plan

6.1 Realization of supply chain visibility in APEC region
6.2 Collaboration with International-standard-making organizations
6.3 Collaboration with other region
6.4 Others

APEC Recommendation

Expansion of transportation

Expansion of the range
- APEC level
- World level

Expansion of a class
- Customs clearance level
- Freight level
APEC Implementation for Cargo Status Information Network for enhancing Supply Chain Visibility

APEC Recommendation for SCV

Result of Questionnaire survey
Thank you!

Dream up the future.

Contact:
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t-morikawa@nri.co.jp