ESCAP-ADB Capacity Building Workshop on Single Window Implementation

Logistics Automation for Global Supply Chain Management

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- ► ROK's Information Standard
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Global Logistics SCM

- Ensure International Logistics Visibility
- ☐ Construct an effective and flexible system through new technology
- ☐ Maximize work efficiency as defining with standard business process

Intelligent Supply Chain Logistics
SOA based Business Collaboration System

Global Logistics

Global Standard

- Define Standard Message
- Define Workflow Guideline

Linking with International Information

Prototype

- Analyze feedback
- Executive & Expert' Opinion
- Anaylze environment

Supports logistics activity against increasing global logistics traffic

Export/Import Cargo Information Linking for seamless logistics flow



Background

International/Domestic Standard for Korean Logistics Information

Logistics Information Linking and Standardization

Reflects international/domestic logistics changing environment Constructs a Standard Plan for Logistics Information`

Environment Changing

- Increase a Association Needs between business entities
- Needs High-Quality Logistics Service
- Request to integrate with u-Business service

Technical Changing

- Logistics Systemized Project under government leading in Korea
- Needs National Logistics Standard
 because of Heterogeneous system or data



Logistics Environment Changing

- O Diversification on Strategic goal
 - <u>Simply inventory control</u> → <u>flexibility, green, customer orientation etc.</u>
- O Flexibility: establishment of risk supply chain management (NOKIA)
 - Fire in New Mexico → prompt product supply from overseas factories
 - ->Increase Worldwide market share 27% to 30%
- O Green: Reverse SCM (HP)
 - recall & re-producing center
 - Generate additional profit from resale a reproduced products
- O Customer orientation : Need (McDonald)
 - moving toward to customer oriented from product
 - Mc café is not only low price policy but also quality for customer's preference



BARRIER FACTORS TO IMPLEMENTATION

- O Structured problems
 - Complicated network structure : coexist with existing system, EDI,
 telephone, email and etc.
 - Difficulty on interconnection among systems
- OSeverance & Security problems
 - Severance and information gap on cargo movement and tracking
 - Unpredictable delay and recovery on supply chain
 - Insufficient on visibility and security
- O Resource management problems
 - Resource waste : unpredictable activities such as additional charge and request on express delivering order



Critical Issue

- O Working process
 - overuse on paper and overtime from manual working process
 - Human intervention on information sharing during interoperation among public sector
- O Technology
 - different types of data and data transfer protocol (enable to interconnect)
 - Coexist with difference data information system
 - Lack of verification of meaning on biz process and data contents
- Standardization
 - unable to correspondence with global standard



Resolving Method

- O Standardization on DATA
 - Data sharing and utilizing by using common use forms
 - Standard Data & Code, global mutual-application
- O Visibility on Logistics Flow
 - Real-time data integration based on u-IT
 - Reduce logistic cost from capturing data with seamless logistics flow
- O Enhancement on Security
 - Prompt and safe cargo movement to meet with the standard security requirement



Resolving Method

- O System Integration => Single Window
- O Information (data, code) Standardization => <u>UN/CEFACT</u>
- O Reducing paper forms => Electronic forms (UNeDocs)
- O Real-time based cargo and vehicles tracking system
 - => u-IT (RFID, GPS)
- O Security Enhancement => AEO, C-TPAT, e-Seal ...



Logistics Information System

This system supports logistics management to be closely associated with information which is related to transportation, shipping and discharging, keeping, packaging, etc. for goods moving.

Area	Logistics System	Logistics Information System
Sea	- Port Management System	- Port-MIS, SP-IDC(B2G)
	- Terminal Gate In/Out System	- PLISM(B2B)
	- Dangerous Declaration System	- Manifest, Customs(B2G)
Railroad	- Railroad Cargo Transport System	- KROIS(B2G)
	- Railroad CY Gate In/Out System	- Busanjin CY(B2G)
	- In-Land Gate In/Out System	- In Land(B2B)
Others	- Immigration	- Immigration Declaration(B2G)
	- Door-to-Door Delivery System	- Not Yet



Korea Standard Status

- Public Section
 - around 100% processed by e-Document (EDI)
 - Ex : Sea Transport, Railway Transport, Customs, Immigration,
 Dangerous Goods Inspection, Quarantine, etc.
 - Problem: Non-Standard Data/Code, exchanging protocol,
 Heterogeneous Matching Key(impossible to associate between each other)
- Private Section
 - around 50% process by e-Document(But, container is 100%)
 - Problem : Heterogeneous Data/Code even though same meaning
 Multiple Standard Code(Container Type/Size, etc)
- Needs to reflect current requirement, Green Logistics



Seamless Logistics

u-Logistics of Seamless Logistics

Realize the advanced Seamless Logistics System

Single View Point with User Focus

Information Linking and Common Utilization

Logistics Automation

Logistics Information Systemization

Request for single view point about export/import business

- No mutual connection
- No Cross-linking and Off-Line checking method
- Service system of provider viewpoint not user viewpoint

Request for holding an information in common

- No supports to hold information in common
- · Non-standard data
- No existing of information link and utilization method

Request for logistics automation and systemization

- Drive for the corresponding entity systemization
- Expansion of IT infra for u-Logistics

Logistics is very important in e-business

Focus : low cost, fast processing, visibility

International logistics environment changing

IT convergence using new technology

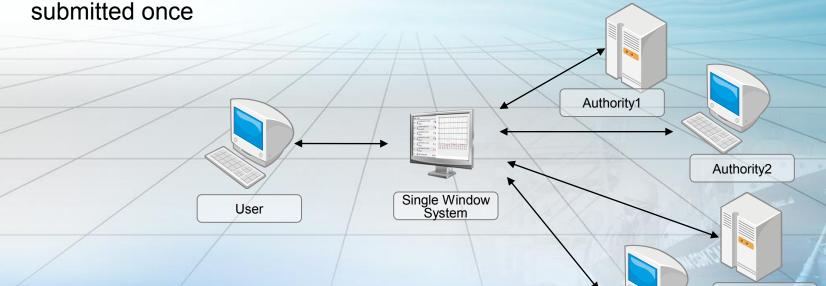


Seamless Logistics - Single Window

Definition of Single Window

 A facility that allows parties to lodge standardized information and documents with a single entry

If information is electronic, then individual data elements should only be





Authority3

Authority4

Seamless Logistics - Single Window

Single Window For Maritime Transport

Expert

Goal

Standard

Collaboration

Technology

Needs

Improvement

- Individual declaration method for each country
- Manual processing

Work Efficiency

- · Redefine Business Process
- · Combine with technology
- Share Information Between IMO Country

Apply Standard

- Define Logistics
 Standard system
- Enhance interoperability



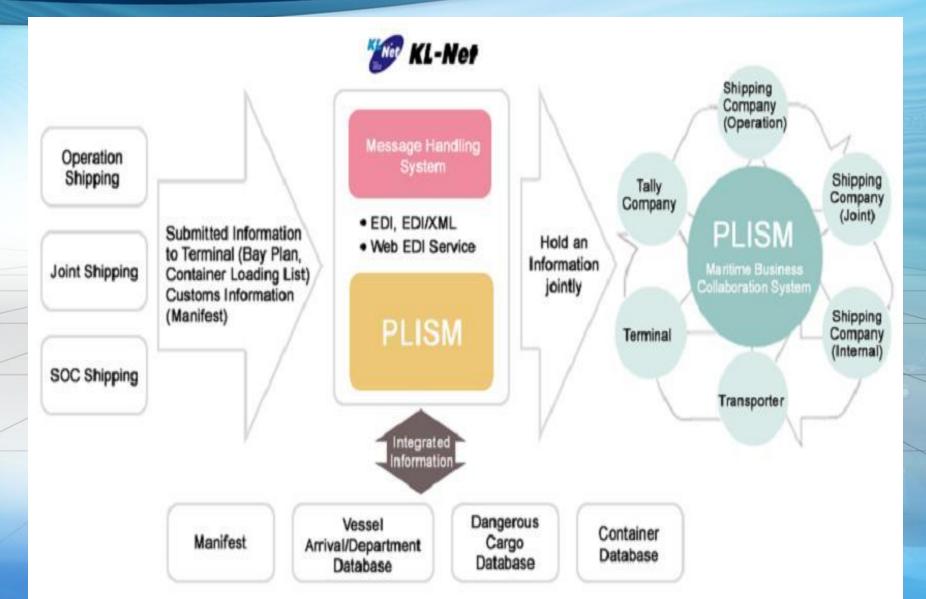
Seamless Logistics - Single Window

KOREA CUSTOMS SERVICE

XML Infrastructure System Sender/Receiver for Single Window Official Authority of Korea · Communication Layer · SOAP WEB · DATA Input/View Carrier by Train Comm Agent - HTTP/FTP/SMTP Agent · WEB Request/Response · PDU MINISTRY OF MARITIME AFFAIRS & FISHERIES Carrier by Truck Application Layer KOREA CUSTOMS SERVICE Forwarder · Retry Road Business · EDI Conv. - Custom Profile KOREA CUSTOMS workflow · Dictionary/Script · Recovery - XML Conv. SERVICE · Scheduling · DB Conv. · Manage/Instance · Network Shipper *3 KOMDIC . DB Layer Carrier by Flight National Quarantine Station Republic of Aprea · System · Monitoring · Process Notifier · Registering File · Error DB



Seamless Logistics - B2B Collaboration System



Seamless Logistics - B2B Collaboration System

SOA Service Oriented Architecture

 System Design per layer with component-concept under e-Business environment

Data Merging

- Combine basic data with other business information
- · Generate New data

Community

- Hold the correct data on common
- Integrated with
 Corresponding Entities

IT Leader of ROK Maritime Business

Reduction: duplication, error, waiting time, Loading time, cost, etc.

PLISM Port Logistics Integrated Information System



Future Logistics System

Cross Border
Trade Increase Labor
Cost

Increase
Container
Traffic

- Use Multi-Modal Transport Means at Cross Border Logistics
- participant with Multiple Business Entities at Cross Border Logistics

The ratio of increase for Global Traffic :Over 6%

The ratio of the estimated global traffic122,300,000TEU

Requires a
Needs for
Speedy•
inexpensive
Logistics



Future Logistics System

- O Must be Intelligent & Sensible System
 - Use Sensing, GPS and Image Processing technology
 - Enhance validation functionality
- O Must support global supply chain's visibility for inter-continental

business

- Use Standard document and exchange protocol
- provide interoperability



Future Stage

Develop Stage

Maturity Stage

Expansion Stage

Preparatory Stage

Set up the Basis

- Analyze Logistics Business Process, Data, Code, etc.
- Analyze Current Problems
- Analyze Domestic Logistics Project
- Define Standard Methodology

Construction

- Design g-SCM
- Define Process, Data, Code
- Define Collaboration
- Define the Role, Activity, etc.
 Define Visibility Method

g-SCM for Logistics

Applying

- Applying g-SCM to Other Countries
- Integrated Data Set
- RFID-based Business Model
- Analyze the result of Applying
- Analyze the strength and weakness

1st Stage

2nd Stage

3rd Stage

Time



Future Goal

Vision u-Logistics for seamless Logistics Goal "Standard, Visibility, Information Linking" **Efficiency** Simplified Association Goall Analyze delay reason Collaboration Process Re-Define Business Process · Analyze Disruption Reason Define Common Elements Link with each country · Extract resolving Method Provide user-friendly requirements Define the related Entities Standard Methodology Standard Protocol **Logistics Lead Time** Define Logistics Business Model and International standard based IT system Initiatives Changing Factor Changing Factor Environment (Policy/Social/International) (Market/Data/Econimoc) Logistics environment and Trend Changing Apply New Technology

Logistics Business viewpoint changing due

Logistics Process Improvement through

to FTA

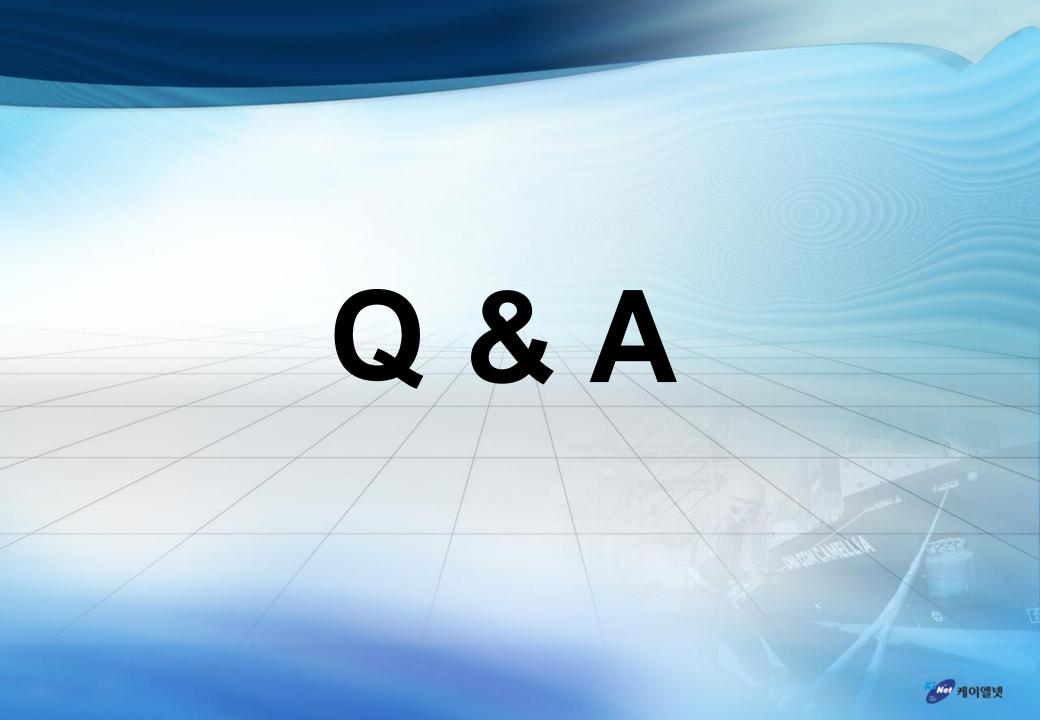
Standardization

=> ex, RFID, Mobile, Ubiquitous

Increase without border and paperless

Strengthen the competitiveness

trade



For Global SCM

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감사합니다!!!

