Promoting the Use of Returnable Pallets among China-Japan-Korea

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Changes of Global Economic Environment

Appearance of Post-Fordism

√ Since 1980's, the Post-Fordism appeared which mean social & technical changes

- Lead changes for production systems, economic governance, regulations, etc.

Division		Fordism	Post-Fordism
Production		Mass production	**Small quantity batch production**
Competitiveness		Basic production factors (land, labor, capital)	High quality production factors (Know-how, Procedure)
Products' character		Common products(standardization)	**Multiple-products(diversification)**
Market Environment		Focused on existing markets & products	Focused on new markets & new products
Organization type		Integrated organization, Own procurement	Network, Outsourcing
Feature	Logistics side	Link among transportations	**Link around the logistics chains**
		Transportation services	Value-added & Total services
		Port-to-port transportation	Door-to-door service
		Economies of scale	**Economies of scope**
	Shipping side	Leading by Shipping Co.	**Leading by shipper & Global logistics Co.**
		Large vessels, Costs competitiveness	Networked & Distinguished services
	Port side	Terminal costs	**Total logistics service costs**
		Shipping Co.-only terminal	**Hybrid terminal**
		Policies based on shipping Co.	**Policies based on shipper**

Source: D. W, Song, KMI Workshop paper, 2008, p.4.

Diffusion of FTAs

√ More than 50% of world trades belong to FTA

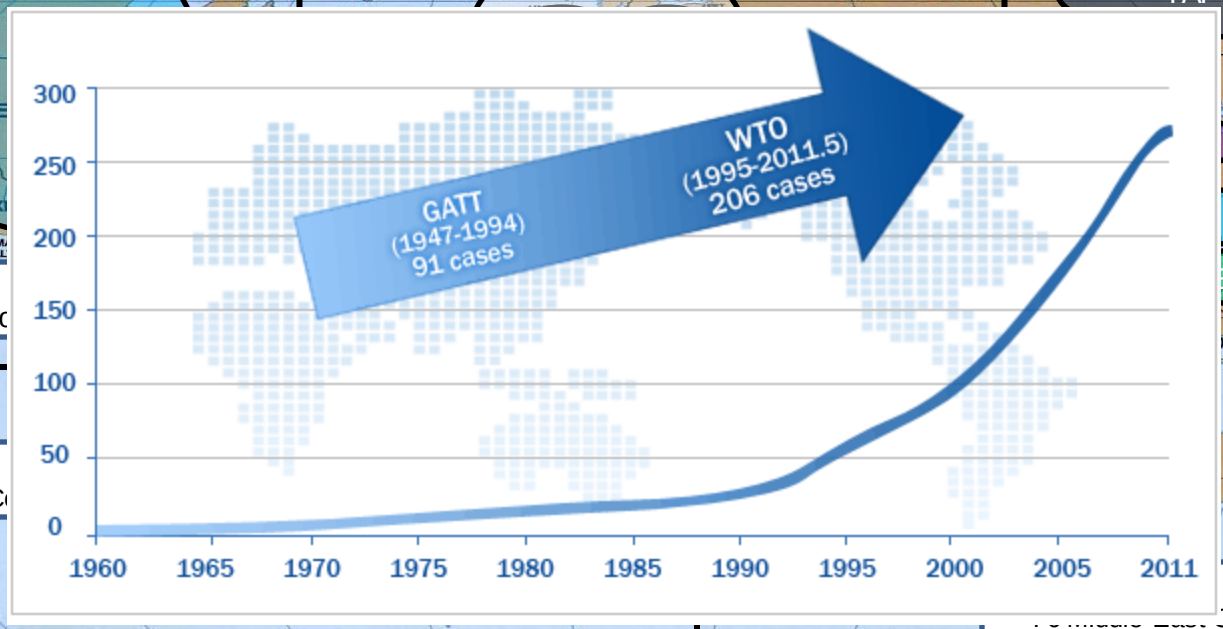
RCC (Southeastern European Regional Council)
: 12 Countries of Southeastern

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: 12 Countries of Southeastern

NAFTA
: USA, Canada, Mexico

Mercosur
: 7 Latin American C

Mediterranean Union
: 44 Countries of Europe, North Africa, Middle East



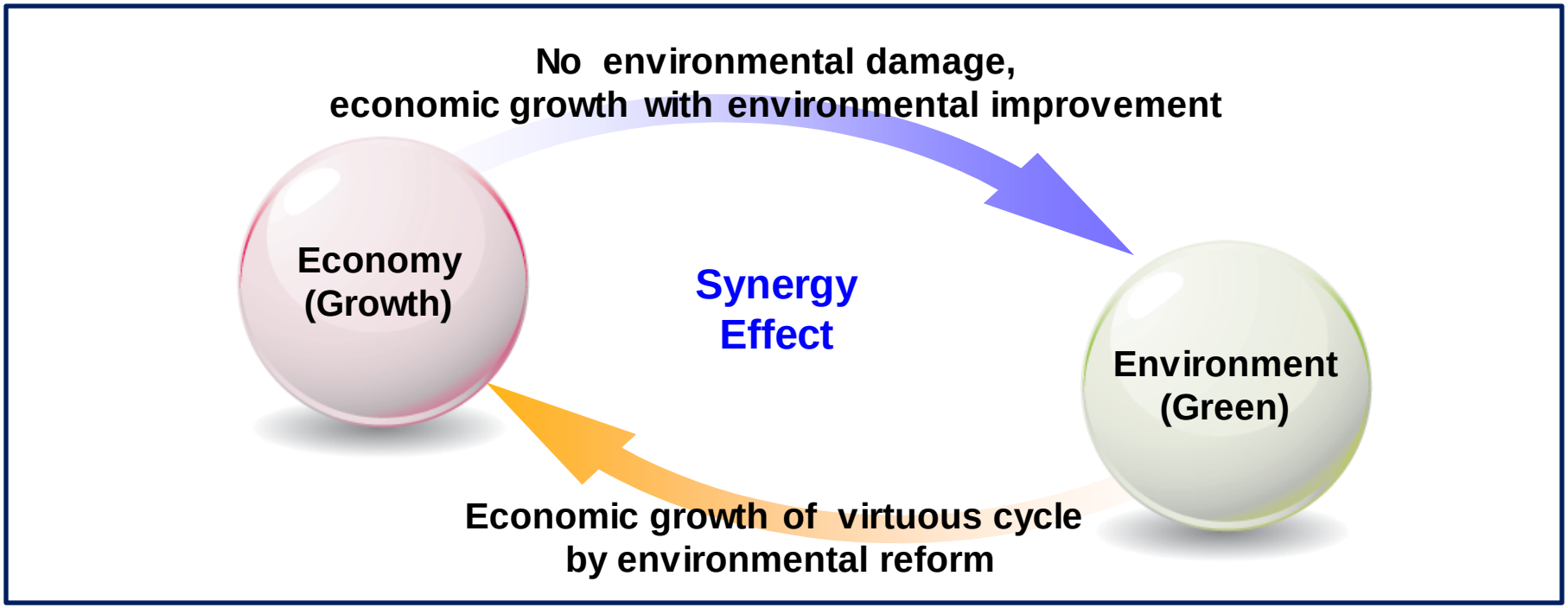
Source: KMI, 2010.

Introduction of Green Logistics

√ Strengthen of obligation against international climate changes & green logistics

International Agreement

- ✓ UN Framework Convention on Climate Change to be imposed from 2013 (2007. 12)
  - Implying to developed & developing countries to reduce greenhouse gases
- ✓ Post Kyoto Protocol (2008. 7)
- ✓ Meeting the Climate Change Convention in Copenhagen (2009)
- ✓ **China-Japan-Korea Logistics Ministerial Conference (2006~Present)**



Logistics Trend in East Asia

Expansion of Trade in East Asia

√ East Asia shows the most dynamic growth in the world

Trade volume of Korea-China-Japan

Unit : one hundred million USD

Division		2006	2007	2008	2009	2010	2011	CAGR
Korea-China	Amounts	1,180	1,450	1,683	1,409	1,884	2,206	**13.3%**
	Ratio	29.2%	31.3%	32.1%	32.0%	32.6%	32.9%	-
Korea-Japan	Amounts	784.6	826.2	892.1	712.0	924.7	1,080	**6.6%**
	Ratio	19.4%	17.8%	17.0%	16.2%	16.0%	16.1%	-
China-Japan	Amounts	2,076	2,360	2,668	2,280	2,966	3,417	**10.5%**
	Ratio	51.4%	50.9%	57.5%	49.2%	64.0%	73.7%	-
Total	Amounts	4,040.6	4,636.5	5,243.4	4,401.1	5,774.5	6703.5	**10.7%**

Source: The Korea International Trade Association, 2012.

Increase of Container Traffic Volume in East Asia

√ Container traffic volume among K-C, K-J, C-J lines show steady increase

Container Traffic volume among CJK

Unit : Ten Thousand TEU

Division		2006	2007	2008	2009	2010	2011	CAGR
Korea-China	Amounts	452	505	499	463	547	625	**6.7%**
Korea-Japan	Amounts	222	230	234	209	246	263	**3.4%**
China-Japan	Amounts	320	343	303	279	298	-	**-1.8%[1)]**
Total	Amounts	994	1,078	1,036	950	1,090	-	**2.3%[2)]**

Note: 2006~2010
Source: 1) Korea-China, Korea-Japan, SP-IDC, 2012.
2) China-Japan, Korea Shipowners' Association , 2012.

Low Performance in Logistics Activities

√ In spite of CAGR 10.7% of trade volume, Japan is the only Asian country for the top 10 in LPI

√ CK need to improve logistics efficiency, while Japan need to improve int'l shipments performance

Ranking of Logistics Performance Index

Rank	Country	LPI (5.0)	Customs	Infrastructure	International Shipments	Logistics Competence	Tracking& Tracing	Timeliness
1	Singapore	4.13	**4.1**	**4.15**	3.99	4.07	4.07	**4.39**
2	Hong Kong	4.12	3.97	4.12	**4.18**	4.08	4.09	4.28
3	Finland	4.05	3.98	4.12	3.85	**4.14**	**4.14**	4.1
4	Germany	4.03	3.87	4.26	3.67	4.09	4.05	4.32
5	Netherlands	4.02	3.85	4.15	3.86	4.05	4.12	4.15
6	Denmark	4.02	3.93	4.07	3.7	4.14	4.1	4.21
7	Belgium	3.98	3.85	4.12	3.73	3.98	4.05	4.2
8	**Japan**	3.93	3.72	4.11	**3.61**	3.97	4.03	4.21
9	United States	3.93	3.67	4.14	3.56	3.96	4.11	4.21
10	United Kingdom	3.9	3.73	3.95	3.63	3.93	4	4.19
21	**Korea, Rep.**	3.7	**3.42**	**3.74**	**3.67**	**3.65**	**3.68**	**4.02**
23	South Africa	3.67	3.35	3.79	3.5	3.56	3.83	4.03
24	Italy	3.67	3.34	3.74	3.53	3.65	3.73	4.05
26	**China**	3.52	**3.25**	**3.61**	**3.46**	**3.47**	**3.52**	**3.8**
27	Turkey	3.51	**3.16**	3.62	**3.38**	3.52	3.54	3.87

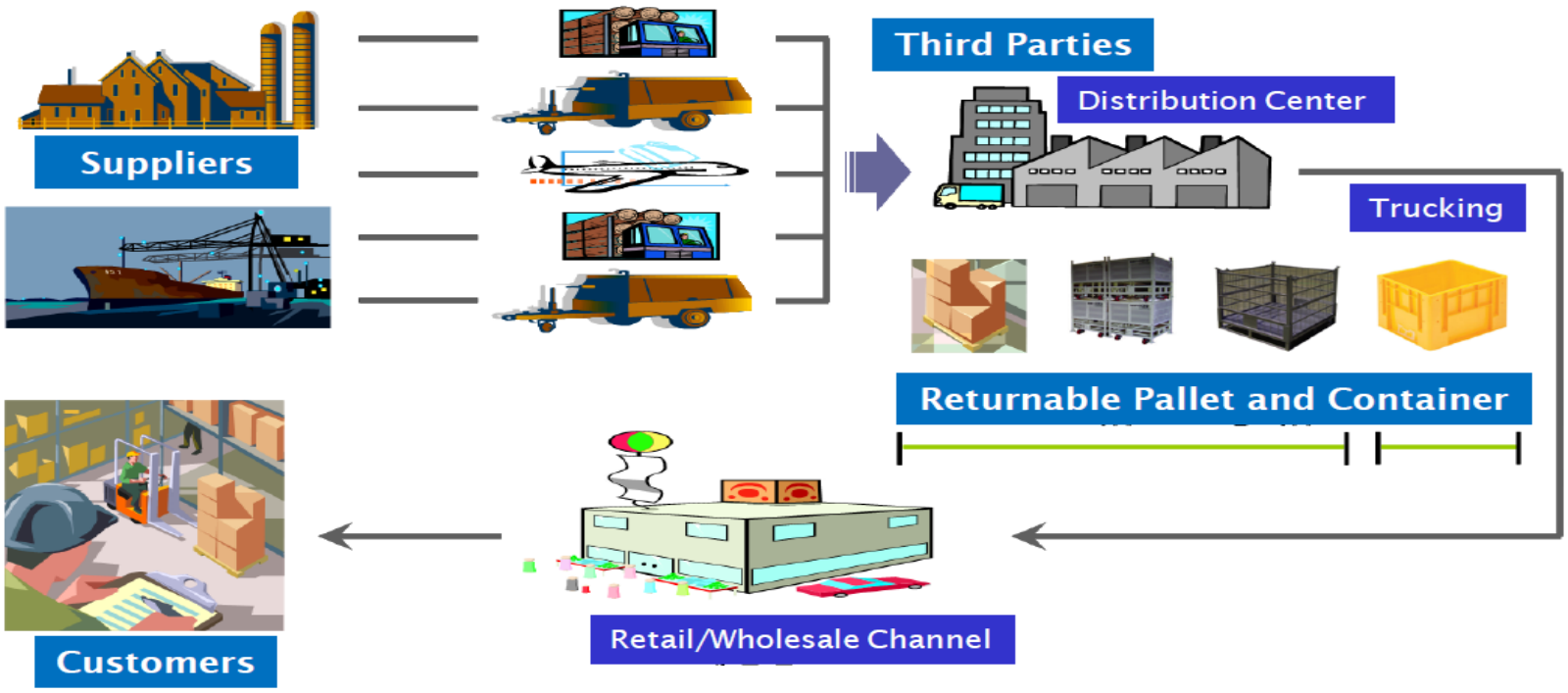
Source: World Bank, 2012.

Needs for
Returnable Pallets System among CJK

Unit Load System (1/2)

√ ULS is a seamless flow from suppliers to the customers

- Unit loads play a key role across the global supply chain



Source: *Visioning for Returnable Pallet Systems in Asia*, APSF, November, 2010.

Unit Load System (2/2)

√ Through effective unit load system can save 1.2% of retail sales price

Expected Savings

Unit : %

Sources of savings potential	Manufacturer	Retailer	Total
Better utilization of transport cube	0.08	0.17	0.25
Warehouse storage, handling and assortment creation	0.05	0.17	0.22
In-store handling and shelf replenishment	-	0.47	0.47
Packaging and materials management	0.17	-	0.17
Loss & damages, cost of capital, administration, miscellaneous	0.03	0.06	0.09
Total of effective UL chain impact	**0.33**	**0.87**	**1.20**

Source: AT Kearney, Efficient Unit Load Project

Definition of Returnable Pallets

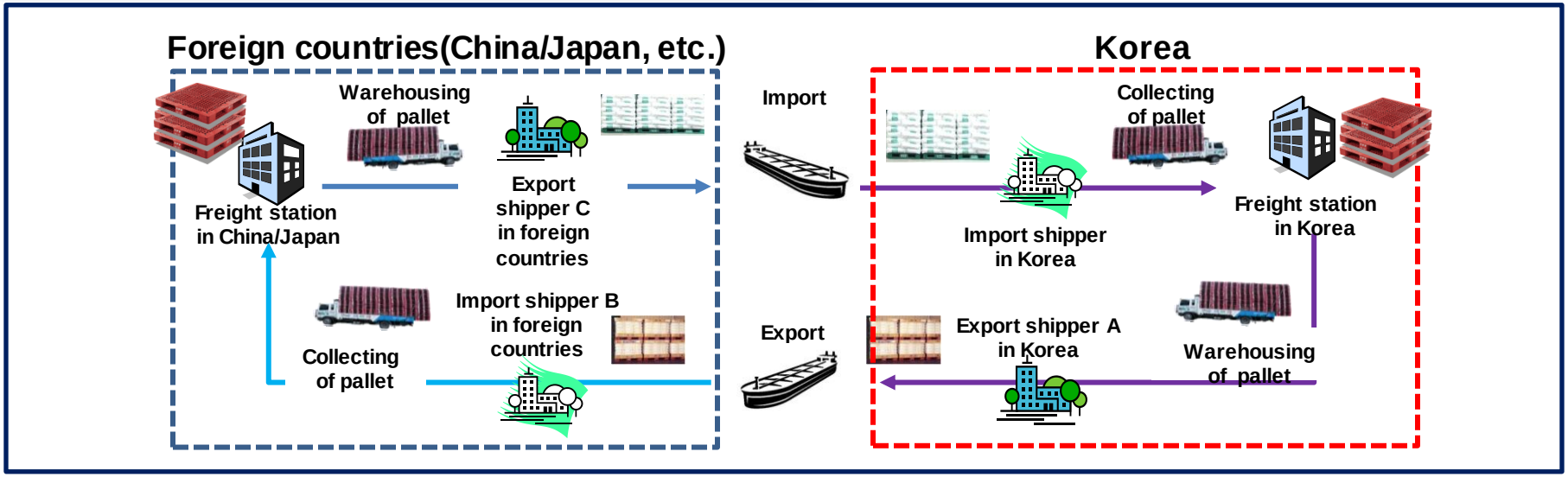
√ Achievement of efficient trading system & green logistics with resources recycling

Definition of Returnable Pallet

- ✓ **Pallet** is a flat transport structure that supports goods in stable while are being lifted by forklift, pallet jack, front loader or other jacking device.
- ✓ **Returnable pallet** means reusable pallet made by plastic, steel, plywood and wood.
  - It used to replace a disposable pallet.



Using Process of Returnable Pallet



Advantages of Returnable Pallets

√ Returnable pallets bring various benefits

Construction of Compatibility System

✓ Construction of compatibility system enables countries which use the same returnable pallet to standardize the logistics system.
- Increase convenience of transportation by compatibility growth

Building of Seamless Logistics

✓ Seamless logistics flow provide systematic logistics services.
- Factory/depot, container ship etc.→ 3rd part (distribution center) → Chain store → Display shelves (retail shop)

Improvement of Goods Safety

✓ Returnable pallets are more substantial, comparing to disposal pallets, and could reduce products damage.
- In particular, goods which are easily damaged through transportation like agricultural product

Reduction of Goods Damage Cost

✓ Claim costs of products damage related with logistics rose to nearby 10 billion U.S. dollars per year. (U.S., 2003)
✓ Disposal costs of food & beverage industry were 3 billion U.S. dollars per year.

Status of Returnable Pallets Use among CJK

Standardization of Pallets among CJK

√ Standard pallet has been relatively promoted in Japan and Korea

- Further promotion of standard size pallets is necessary for China where various size of pallet are used

Pallet Standard of CJK

✓ Korea, Japan : Adopted the standard of 1,100×1,100mm as Asian standard
✓ China : Use different sizes of pallets, but mostly used pallets sizes are 1,200×1,100mm and 1,100×1,100mm

China	Korea	Japan
GB/T 2937-2007 (Standardized through-transit Pallets) • **1,100×1,100mm** • **1,200×1,000mm**	KS A 2175-2008 (Standardized through-transit Pallets <international transport) • **1,100×1,100mm** • **1,200×1,000mm**	JIS Z0601 (Standardized through-transit Pallets) • **1,100×1,100mm**

Source: *MLIT*, 2012.3.22

Status of Returnable Pallets Used in Korea

√ The ratio of pallets usage is 98.6%(2011), while it was 87.3% in 2003 in Korea

Number of Pallet Use in Korea (2006)

Unit : thousand sheet

Division	Wooden		Plastic		Steel		Paper		Total	
	Amounts	Ratio	Amounts	Ratio	Amounts	Ratio	Amounts	Ratio	Amounts	Ratio
Manufacturing	42,540	31.4%	65,868	48.7%	18,168	13.4%	1,044	0.8%	**127,620**	**94.3%**
Distribution	1,416	1.0%	2,112	1.6%	216	0.2%	-	-	**3,744**	**2.8%**
Logistics	240	0.2%	1,848	1.4%	1,836	1.4%	-	-	**3,924**	**2.9%**
Total	44,196	32.7%	69,828	51.6%	20,220	14.9%	1,044	0.8%	**135,288**	**100.0%**

Source: KMI, 2012.

But, quantity of returnable pallet use is less than 19% in Korea industry
(Total amounts of pallet use : 72,250 thousand sheets in 2007)

Moreover, quantity of returnable pallet use is so slight in actual trades within KCJ

Status of Returnable Pallets Used in Japan

√ In Japan returnable pallets are used in some industries suitable for using

Number of Pallets for Lease (2009)

Unit : thousand sheet

Division	Wooden Flat	Plastic Flat	Roll Box	Box	Others	Total
Amount	7,463	8,740	655	115	658	**16,933**

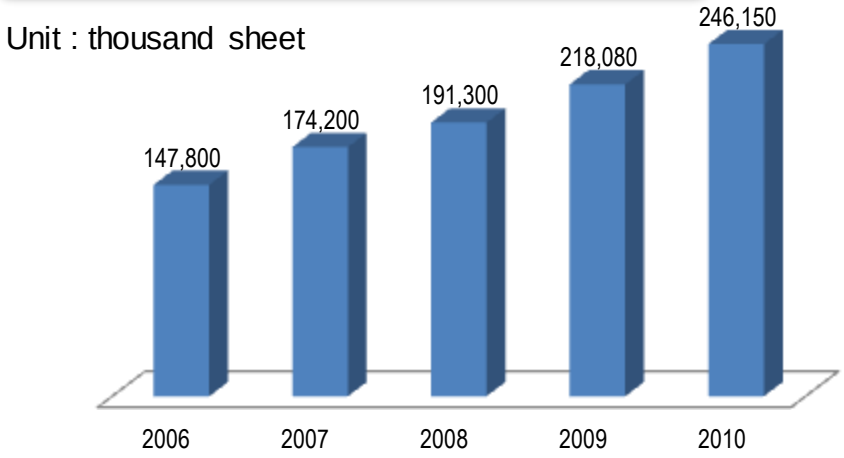
Source: Japan Pallet Association, 2009.5

Division	① P Type	② PalleNet	③NPP	④ Beer Pallet
Size	1100×1100mm(T11) Plastic Pallet	1100×1100mm(T11) Plastic Pallet etc.	1100×1400mm (14 Type) Wooden Pallet	1100×900mm (9 Type) Plastic Pallet
Collect Structure	Joint collect Shippers set the period from shipment to the collecting point of pallets and bear rental fee according to that period Jointly collecting points are usually wholesale and retail and centers etc.	Joint collect When the makers of spare parts deliver pallets to the makers and when makers return the pallets to the PalletNet, let them register on the system. And let them pay for the cost according to the length of using time. PalleNet collects pallets at makers' node and deliver them to the node of makers of spare parts	Joint collect The users bear the cost in advance, according to the length of use, until the pallets are collected into the NPP's warehouse NPP has a lot of warehouses that are used as the node of logistics service providers	Jointly use pallets that owned by each company (replenish according to the each company's sales record)
Main User	Processed Foods	Nissan Group, Canon Group	Chemical Industry	Beer

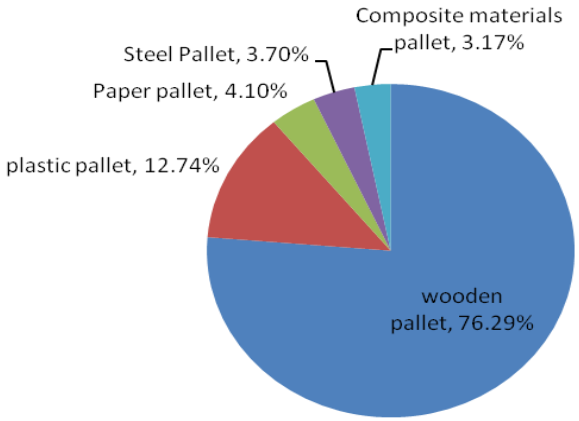
Status of Returnable Pallets Used in China

√There are about 246 million pallets in China and the number increases rapidly

Number of Pallets Use in China



Percentage of Pallets Used by Materials



The vast majority of pallets used in China just recycle within the enterprise

Some enterprises implement the mode of the pallet exchange

Only part of enterprises implement the mode of pallet leasing

Source: *The Status of Returnable Pallets in China*, Yang Bin, 2012.3.22

Status of Returnable Pallets Used among CJK

√ **In 2007, annual amount of pallets used in CJK was approximately 720 mil. sheets**

- **But the percentage of returnable pallets use was only 0.8%**

Status of Pallet Use among CJK(2007)

Division	Disposable	Returnable	Total
Number	71,697,005	552,995	72,250,000
Percentage	99.2%	0.8%	100%
Amount	100,376	55	100,431

Average price : disposable pallet 14,000Won / returnable pallet 1,000Won

(unit price of returnable pallet is 30,000Won / assumption : use 5 times annually, depreciation period 6years)

30,000 Won ÷ 5 Times ÷ 6 Years = 1,000 Won/Sheet

Can save logistics cos*t if use returnable pallets instead of disposables

*KMI estimate around 7,468 million USD/Y, based on 2006 data

Problems of Returnable Pallet Use(1/3)

√ Difficulty of identification of same returnable pallets / applying customs fee

✓ Exporter must record 'identification' confirmed by commissioner of customs on export declaration for all used pallets.
- Management and confirmation of all data related to the national customs

✓ Returnable pallets are **not regarded as a customs free item**.
✓ Returnable pallets could achieve the maximum effect when they used in large scope.
- **But due to impossibility of applying customs free, they are using in limited area like transportation between parent and subsidiary companies.**

✓ Returnable pallets have price competitiveness comparing with disposal pallets.
- **But customs fee/VAT countervail all other merits, especially VAT is charged on price which the customs fees were added first. → Double charge effect**

Customs Tariff

Unit : %

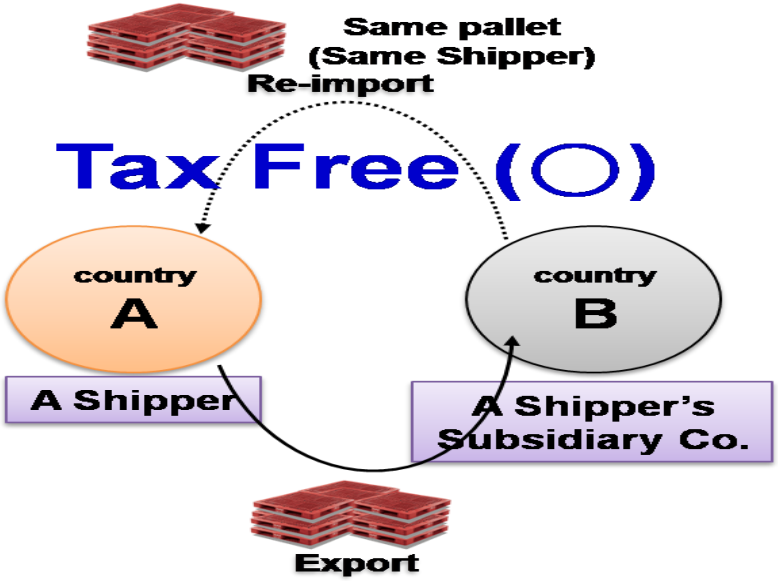
Division	Korea	China	Japan
Customs Fee	6.5-8	8.0	5.8
VAT	10.0	17.0	5.0

Note: VAT based on charged customs fee.

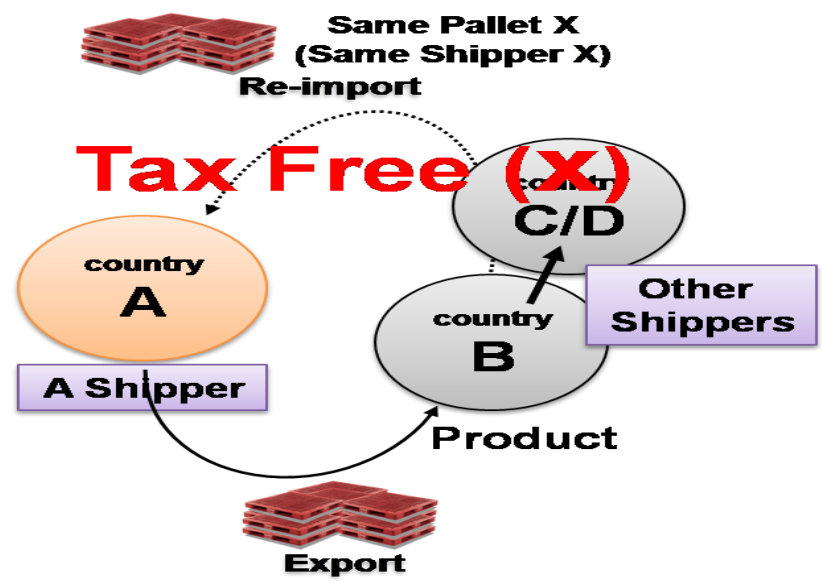
Problems of Returnable Pallet Use(2/3)

√ Difficulty of practical implementation of institutional system

Between 2 countries



Among more than 3 countries



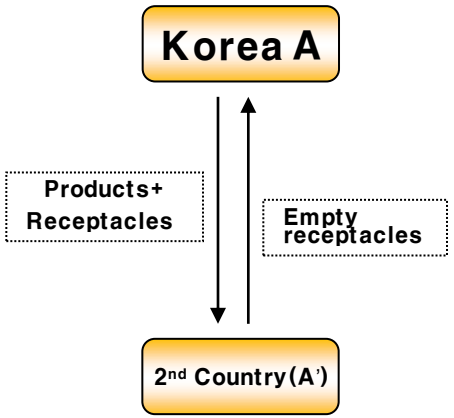
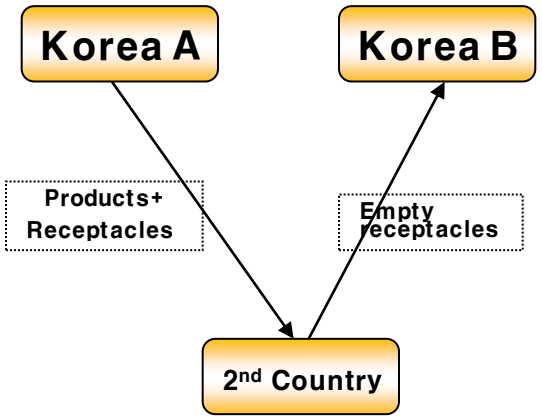
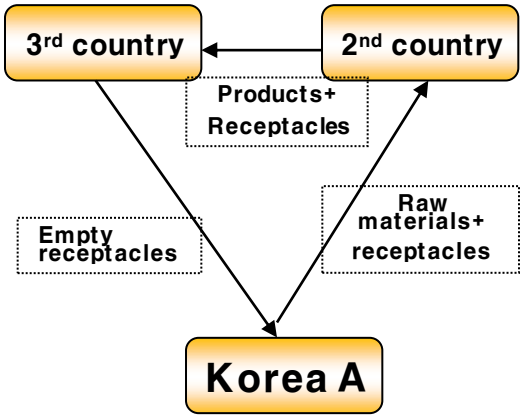
No problem on institutional system

But, it is **difficult**
to certify sameness of pallets

But, It is **impossible**
to certify sameness of pallets

Problems of Returnable Pallet Use(3/3)

√ Problems by transferring types among three countries

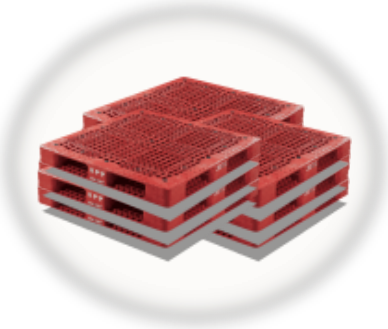
Type	In case that an importer and exporter is the same and importing/exporting country is one. (simple transportation between a subsidiary and a parent company)	An exporter export products to the 2nd country and receptacles are re-imported by another importer	An exporter export products to the 2nd country and receptacles are re-imported to Korea through the 3rd country
Process			
Problems	For the sameness of the receptacles can be verified, customs can be refunded in accordance with Article 99 (Exemption on Goods Re-imported) of Customs Act	- It is difficult to prove that receptacles re-imported are collected and re-exported by an exporters in the 2nd country - It is very hard to refund customs and VATs.	It is the ideal common use model, but procedures for customs refund is very complicated. So, disposable receptacles are used
Key facts	No problems under current systems	Not impossible but costs will be bigger than benefits	99% impossible. The disposables are mostly used

Promoting the Use of Returnable Pallets Among CJK

Standardization of Returnable Pallets

√ Standardization on Returnable Pallets Use among CJK

- Set up ranges of size, quality, material of returnable pallet



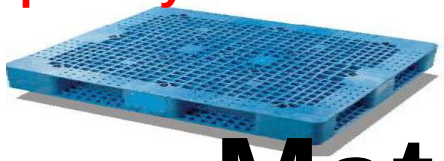
ISO standard of pallet

Size

Division	Size
Rectangle	- 1,200×800mm **- 1,200×1,000mm (2nd priority)** - 1,219×1,016mm (48×40inch)
Square	**- 1,100×1,100mm (1st priority)** - 1,140×1,140mm - 1,067×1,067mm (42×42inch)

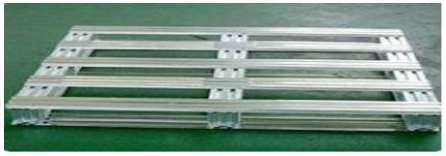
Material

1st priority Plastic



Wooden





Steel



Highly Pressed paper

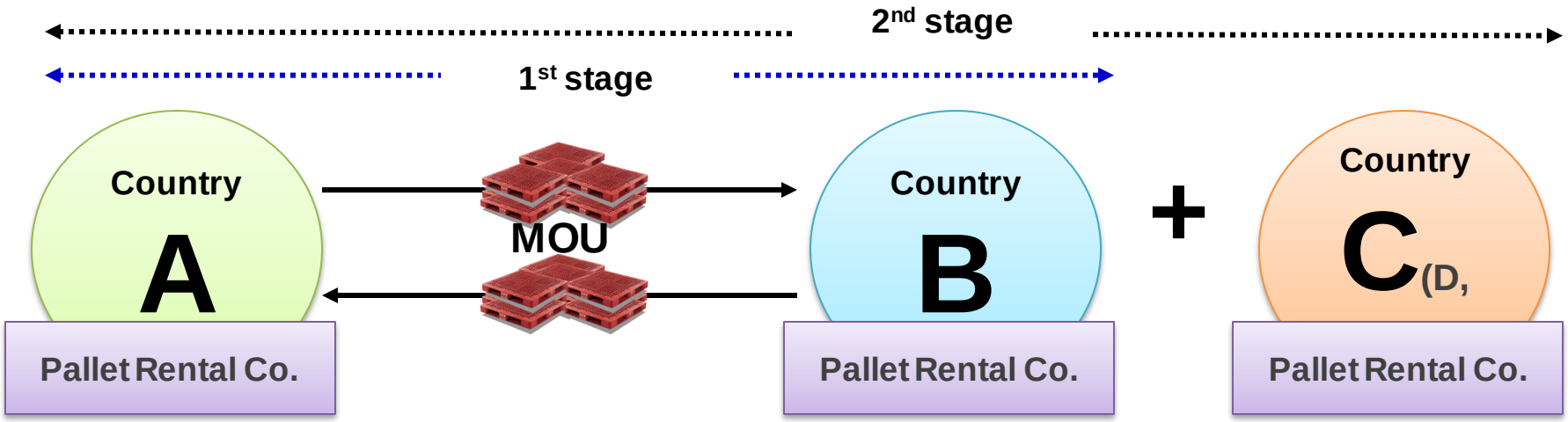
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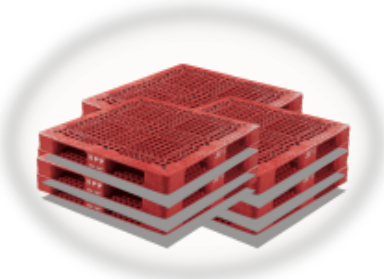
Quality

Strength, Stiffness, Durability etc.

Pilot Project

√ Implement pilot project to apply duty free on returnable pallets between 2 countries





- ✓ Introduce returnable pallets, which are marked same image
- ✓ In each country, establish the pallet rental company and sign the MOU
- ✓ Each rental pallets company has same amounts of pallets
- ✓ Apply duty free to all of pallets that has certified mark without customs procedures and other documents.
  - ▪ There are no need to fill out the customs declaration form

Expand the range of pilot project to CJK (and Asian countries)

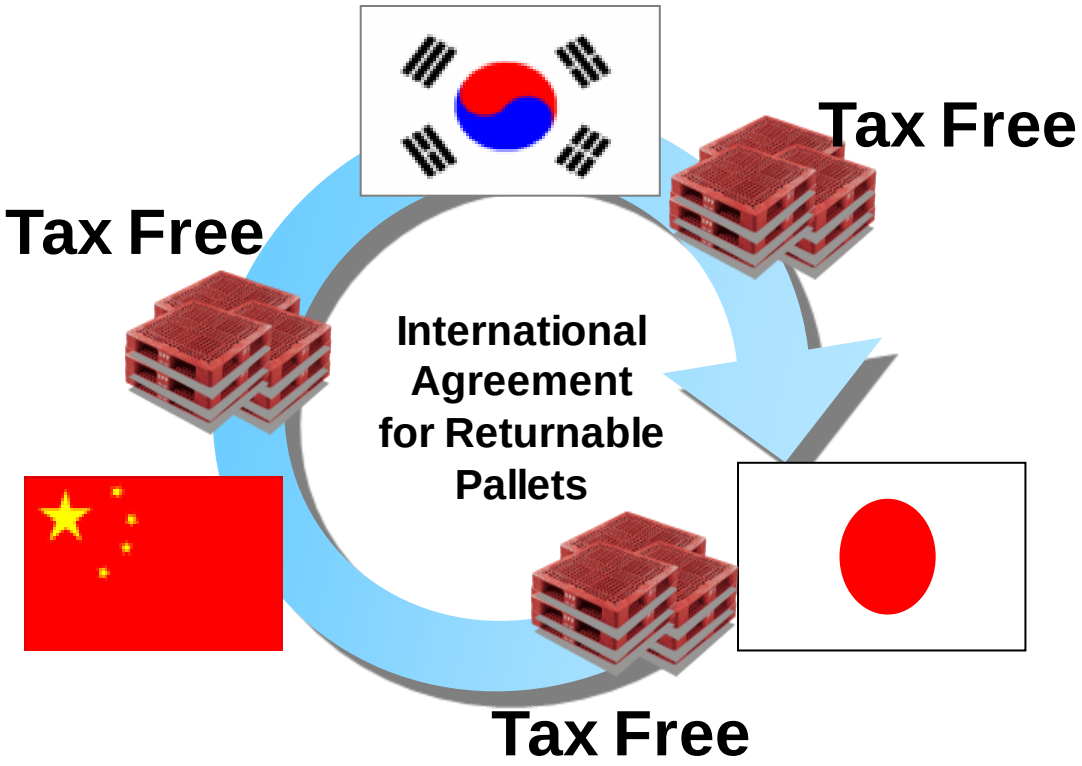
International Agreement

√ Promote Int'l Agreement on returnable pallets among CJK in the long-term

- Apply customs-free on all of returnable pallets among CJK

International Agreement

Apply to duty free all of re-imported/ re-exported returnable pallets *that has certificated marks by Korea, China and Japan* ***without additional*** *documents,* ***processes****, and limitation of date* ***within Korea-China-Japan***



감사합니다.

謝謝!

ありがとうございました。

Thank You

Constructing Seamless Sea-Land Intermodal Transport Logistics System

——Develop China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION, promote industrial upgrading and integration between China and Korea

WEIDONG FERRY CO.,LTD

The speaker：Shan GuoFang

CATALOG

- **Preface**
- **The general situation of WEIDONG FERRY CO.,LTD**
- **Advanced logistics mode will promote economic development, industrial upgrading and integration**
- **The concept of China and South Korea seamless integrated logistics system**
- **The update of China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION**
- **Benefit from CJK FTA and Shandong Economic Cooperation Demonstration Zone , promote construction of China- Korea seamless integrated logistics system**
- **Overview**

PREFACE

Wei dong Ferry company was established in 1990.It is the first Ro-Ro passenger cargo liner between China and South Korea. The establishment of Weidong ferry opens the door of CHN-ROK economic and trade communication. Weidong has operated safely for more than 20 years . A large volumes of cargoes as well as passengers have been delivered between CHN and ROK by Weidong during the 20 years .It makes a significant contribution to economic and trade communication between CHN and ROK.

Along with rapidly expanding of economic and trade cooperation between China and Korea， manufacturing enterprises put forward a higher requirement for transport performance. To meet the needs of the market，there is an urgent need to establish a seamless integrated logistics service system between the two countries so as to promote industrial upgrading and integration.

In this case，both countries, market, enterprises set their sights on a new logistics mode——China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION ！

1. The general situation of WEIDONG Ferry







1. Introduction

Weidong Ferry company was established in August 12, 1990.Business scope covers passenger cargo liner shipping services between China and South Korean, international container terminal, international and domestic road transport services and international maritime cargo storage. It owns and self-employed two most luxurious international passenger cargo ro-ro ships， it also operated 4 container liner routes.

Weidong Ferry company has been a professional, safe, efficient, punctual standard strict demands on themselves since company was established， that has a higher reputation in government and industry .

Until 2011, Weidong has conveyed passengers about 3.5million , cargoes about 1.5 million TEU.



Description of our ships

SHIP'NAME	G/T	Length	Breadth	Pass Capacity	Cargo Hold
NEW GLODEN BRIDGE Ⅴ	29,5540 ton	196.0 m	27.0 m	660	325 TEU
NEW GLODEN BRIDGE Ⅱ	26,435 ton	186.5 m	24.8m	731	290 TEU





1. Wendeng CY and CFS Service Branch

Wendeng CY and CFS Service Branch was established in Nov,2004.The station is equipped with an electronic monitoring facilities, customs inspection facilities.

It can provide service on international container transport, storage, transfer, loading /unloading and international maritime cargo warehousing.

It is the most important container terminal which serve the long distance cargo transportation for Weidong.



1. The main products and services

Weidong takes highway transportation as the extension of the maritime transport services， It construct a network based on Jiaodong Peninsula, extend to most areas of China.



1. Social credit

Benefit from the strong support from the governments of the two countries ， Weidong Ferry has a good reputation nationwide， obtained a long list of titles of honor.











1.Weidong Electronic information system

- The Weidong ’s business system is mainly composed of WEWINS system serving the ship company and the information management system serving the Wendeng station .

- Through a good communication between the two systems, we able to conduct seamless connection and collaboration with freight forwarding, pipes, transportation and other related business.

2. Advanced logistics mode will promote economic development, industrial upgrading and integration







2. Advanced logistics mode will promote economic development, industrial upgrading and integration

2.1 Advanced logistics mode will promote economic development

The logistics industry is a composite service industry, that integrates transport, warehousing, freight forwarding industry and information industry. As an important part of the national economy, it not only provides a large number of employment opportunities, but also facilitates production, stimulate consumption. Overall. the logistics industry play an important role in promoting the adjustment of industrial structure, changing the mode of economic development and enhancing the competitiveness of the national economy .

Today，the competition between the enterprise becomes more and more intense, the space to reduce products' cost is very limitative. Transportation and storage costs compression has become the key point of enterprise competition, logistics has become the" third profit source of enterprises".

2. Advanced logistics mode will promote economic development, industrial upgrading and integration

According to the world bank analysis，Developed countries logistics cost account for about 10% of the GDP，the United States is less than 10%, China total logistics cost account for about 18% of its GDP . During the period of" The Tenth Five Year Plan" in China，if the logistics costs' proportion can be reduced to 15%, 2,400 million RMB will be saved annually for whole society.

2. Advanced logistics mode will promote economic development, industrial upgrading and integration

2.2 China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION will promote industrial upgrading and integration

Trailer chassis transportation without a tractor is a mode of vehicle logistics. In the process of cargo transportation，the container or other cargo is relatively fixed on the semi-trailer ;in loading and unloading operation，Trailer chassis transportation without a tractor only has the horizontal direction movement, not the vertical direction movement，it is a pattern of seamless logistics mode.

2. Advanced logistics mode will promote economic development, industrial upgrading and integration

By using Trailer chassis transportation without a tractor， not only the current repeated loading problems in the process of container transportation can be solved , the logistics time, logistics cost, energy and human waste also will be reduced accordingly. It can provide more convenient services like Door to Door. For some cargoes in large size which are not easy to handle, precision instruments which need absorb shock , cargoes which need fast customs clearance speed, the **SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION** becomes possible.

If we are able to establish a set of seamless integrated logistics service system transport on the basis of Trailer chassis transportation without a tractor, not only the industry upgrading and integration is promoted, but also the enterprises and society gains considerable economic benefits.

Examples：

2. Advanced logistics mode will promote economic development, industrial upgrading and integration

- **Promote the high-tech industry development, like LCD panel**

  According to statistics from Chinese Ministry of Commerce , the demand of precision instruments like LCD panel in the China market is very large .In recent years， LCD panel, almost all rely on imports , Last year nearly $40 billion LCD panel are imported into China market， which is the fourth largest single case of imported goods following the petroleum, iron ore and the chip .

  Manufacturers imported large quantities of LCD panel, at the same time, they also built many new production lines in China. At present, the mainstream of the world's LCD panel products are the eighth generation and beyond， China 's LCD panel production enterprises are upgrading their products step by step .It is expected that the in the coming two to three years， the main products of LCD panel in China market will be 8.5 generation and above.

2. Advanced logistics mode will promote economic development, industrial upgrading and integration

According to the LG Executive， LCD panel products over 8.5 G （2.20*2.50m） must ensure horizontal displace without vibration .There are only two modes can support overseas transport services of the LCD panel products over 8.5 G：SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION without vibration and air transportation .

Although air transportation is much more faster than SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION， but it is unable to support the services of DOOR to DOOR. And the cost is approximately10 times than the SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION .

Without doubt , the SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION is the first choice of fragile precision instrument .



The tenth generation of LCD panel
2.85m*3.05m

2. Advanced logistics mode will promote economic development, industrial upgrading and integration

With the development of science and technology， advanced 3D and OLED panel technology already appeared In the world .These are the potential customer who will use Trailer chassis transportation without a tractor. Through providing high-volume, low cost, high levels of logistics service for these high-precision fragile products, not only the transportation of these commodities inside China and between China and other countries becomes possible, but also the industry development and upgrading are promoted.

PS：3D liquid crystal can provide the stereoscopic viewing function with the naked eye (without wearing glasses)；OLED (organic light-emitting diode)，is a new type of flat panel display technology，with light, energy saving and other characteristics.

2. Advanced logistics mode will promote economic development, industrial upgrading and integration

- China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION can promote industrial upgrading and integration between China and South Korea.

In order to upgrade the structure of industry , China welcome the South Korea or Japan 's high-precision industry entry and be stationed in， and some of the company in this industry also has the plan to move into China for their own strategic needs. In this case，by using Automobile Cargo Land -Sea intermodal Transport, the cost of movement can be thus greatly reduced， and most important , the movement becomes possible.

These instruments and equipment that are not easy to be multiply moved down and encasement, It is the potential demand for Drop-and-Pull transport market .

2. Advanced logistics mode will promote economic development, industrial upgrading and integration

Example： SKhynix ,the first company using the mode to move plant, imported/exported Korean Trailer 465 times from Qingdao, Rizhao Port. All kinds of precision equipment, microelectronics products were imported by land - sea intermodal transport, which weigh 3720 tons, value $130 million .

Land - sea intermodal transport not only meet the need of the special transport of high-volume precision equipment without vibration, but also reduces the logistics cost by 60%,and bring the output value nearly $500 million.







2. Advanced logistics mode will promote economic development, industrial upgrading and integration

Promote fresh aquatic products trade between China and South Korea .Weihai is main fresh seafood collecting and distributing centre (fish, octopus, and sea worm) from China to South Korea， the annual export volume is around 3000TEU .If we can establish the bonded area, realize the efficient cold chain logistics, that would provide more convenient, faster, higher-quality transportation services for agricultural products and frozen cargo from Shandong to South Korea.



Quick freezing van between Japan and South Korea



Fresh aquatic products Car between Japan and South Korea

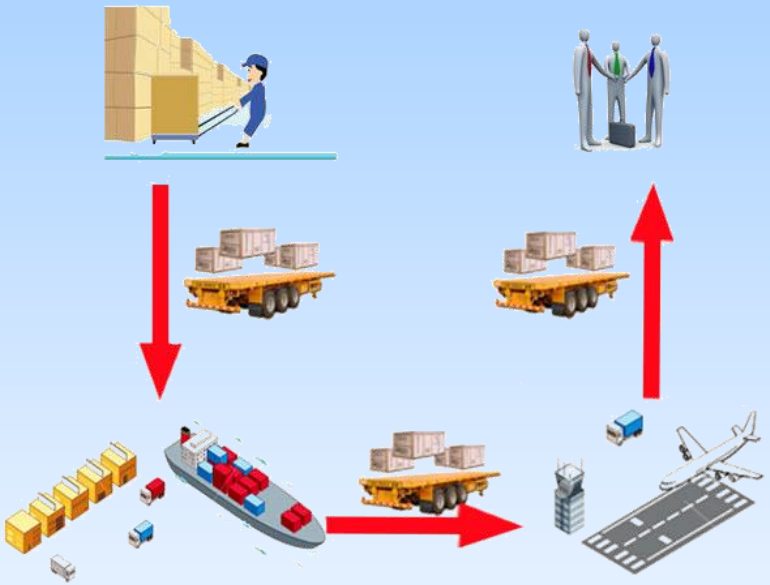
2. Advanced logistics mode will promote economic development, industrial upgrading and integration

- **Promote the development of air and sea intermodal transport of goods**

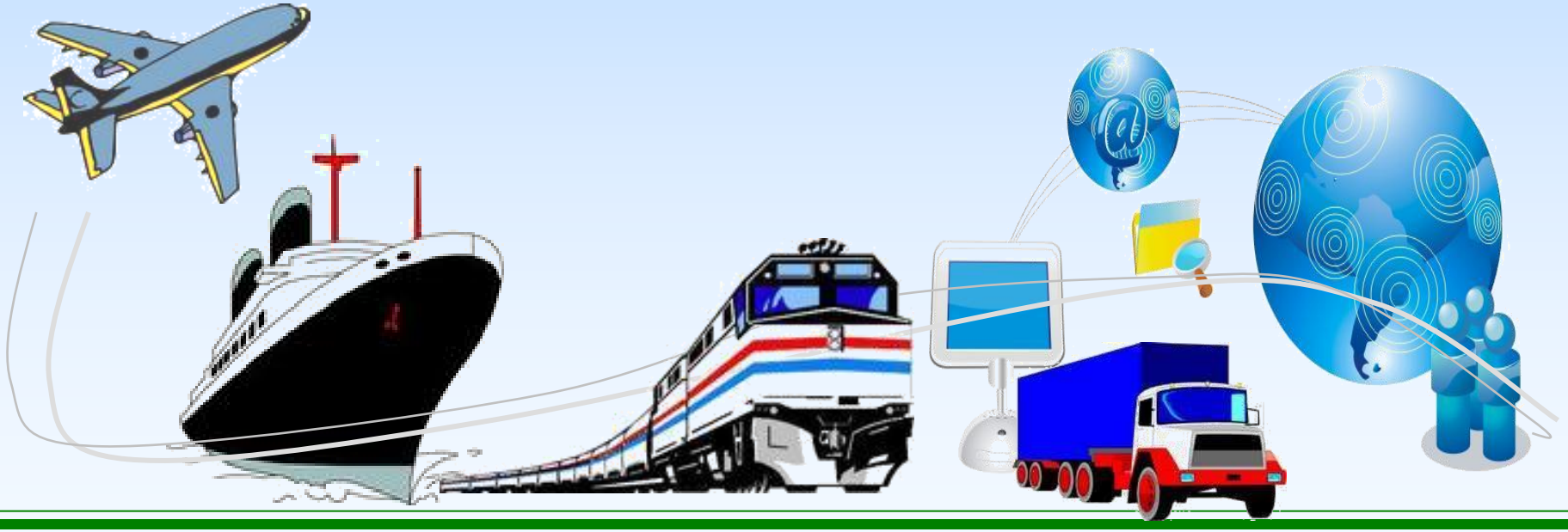
Sea and air transport is the multimodal transport mainly based on air， which has the advantages of high speed ,but also charactered by large volume ,less cost of sea transport .

Because most of airplane can not deliver the sea container, the goods are usually exchange from sea container to air container in the air port .Therefore， how to transit rapid, to handle of goods safely and deliver on time like most air transport do become the key issue for air and sea joint transport **.**

By using Trailer chassis transportation without a tractor, the air container can be fixed in the semi trailer , joint transported by ship and air , so as to realize factory -- dock -- airport seamless rapid transport without hoisting, loading /unloading .

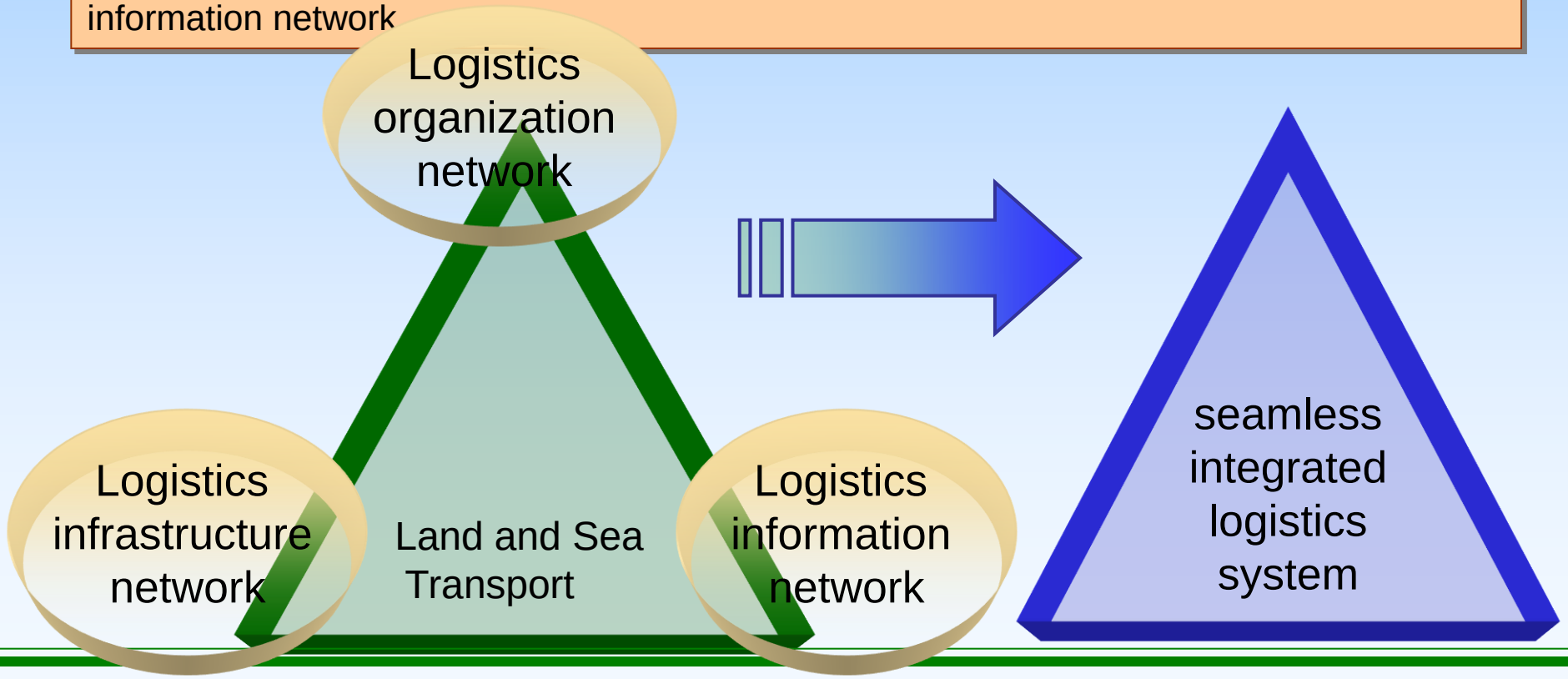


3. The concept of China and South Korea seamless integrated logistics system，based on China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION



3. Based on China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION , constructing seamless integrated logistics system

To develop SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION projects, and then to establish a seamless integrated logistics system, three large logistics network system are supposed to be built：
1）Logistics organization network 2）Logistics infrastructure network 3）Logistics information network



3. Based on China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION , constructing seamless integrated logistics system

3.1 China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION process design

In order to realize the seamless integrated logistics system, we need to establish a smooth path of Trailer chassis transportation without a tractor as the foundation. Trailer chassis transportation without a tractor a kind of mode of vehicle logistics . The ideal process is as follows：

Export process： First, container truck carry the cargoes to designated inspection and quarantine area in port. Second, a one-stop customs clearance inspection with the aid of electronic information platform by the joint inspection departments is conducted. Third, declared at customs and the fourth , the tractor drags semi-trailer to the cabin， lets the semi-trailer carrying cargoes stop on the boat. Last, the tractor leaves the cabin.

Import process：After the ship arriving at the port of destination， tractor of port enter into the cabin， connects the semi-trailer carrying the goods ， transported to the designated quarantine area of destination port and have one-stop customs clearance inspection. After that , the goods can be delivered to the factory.

Flow diagram below

3. Based on China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION , constructing seamless integrated logistics system

Flow diagram

Delivery



Consignment



1. container truck carrying the goods drives to designated inspection and quarantine area in port, to have a one-stop customs clearance inspection .Then, the tractor drags semi-trailer to the cabin，lets the semi-trailer and goods stop on the boat,



2. the tractor leaves the cabin



4. tractor of destination port drives into the cabin，connects the semi-trailer carrying the goods ，transported to the designated quarantine area



5. Deliver the goods to the factory after having one-stop customs clearance inspection.



one-stop customs clearance inspection

one-stop customs clearance inspection





Port of discharge

3. Transport by ship



Port of loading

3. Based on China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION , constructing seamless integrated logistics system

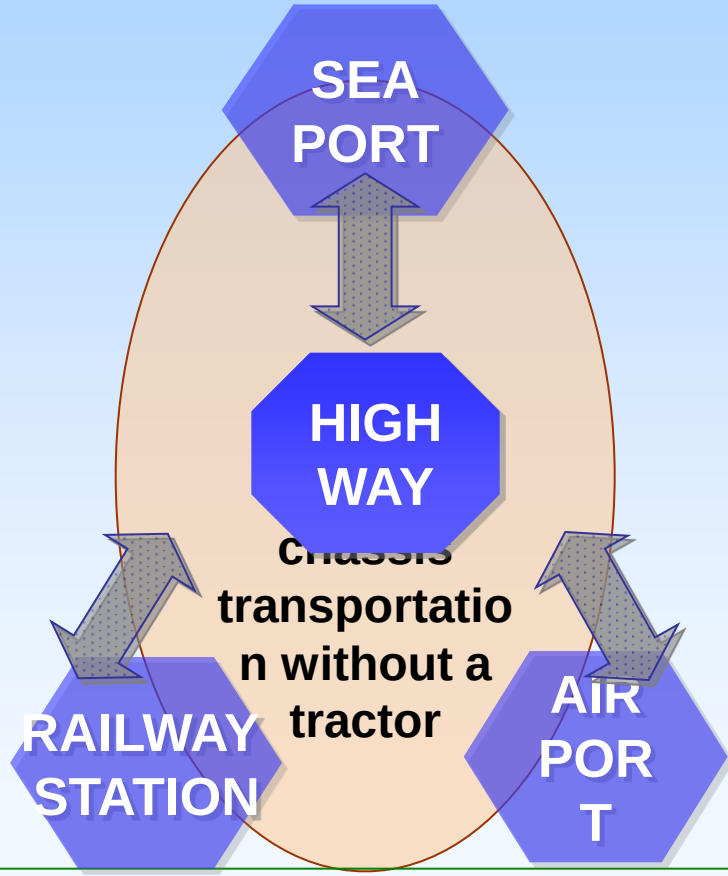
3.2 To establish a seamless logistics organization network of Trailer chassis transportation without a tractor

To build a seamless integrated logistics network system based on road transport, connecting sea , air, railway transport.

In the traditional international multimodal transport ,container is the unit of transport，

Trailer chassis transportation without a tractor with Semi trailer and container bound as a transport unit injects new elements into International multimodal transport

In turn，the establishment of international multimodal transport network，provides a wider space for the development of Trailer chassis transportation without a tractor. The combination of both can make a multiple positive effect.



3. Based on China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION , constructing seamless integrated logistics system

Use the port city for Trailer chassis transportation without a tractor as logistics node, establish the distribution system covering whole China

Many countries and regions' development experience proves that, the coastal regions are always a national or regional industrial center, has a leading role to the economy development area of surrounding area.

3. Based on China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION , constructing seamless integrated logistics system

3.3 Establish logistics infrastructure network system of Drop-and-Pull transport

- Establish the path of SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION

The path is the necessary infrastructure for doing the business of SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION. In a ideal condition ,the path should include some elements ：

○There is less than one quarantine area for parking semi-trailer (and goods). The quarantine inspection area should be authorized by customs, commodity inspection ,and other inspection departments, with the function of inspection and quarantine, goods and semi-trailers can be simultaneously declared at customs in there.

3. Based on China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION , constructing seamless integrated logistics system

- There must be some offices for one- stop customs , where, Customs, Commodity inspection, Border police , Road Transport Management ,Maritime bureau can handle business .
- The path of vehicle is clear enough.
- The specific managerial regulations and rate's standard of SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION should be performed.

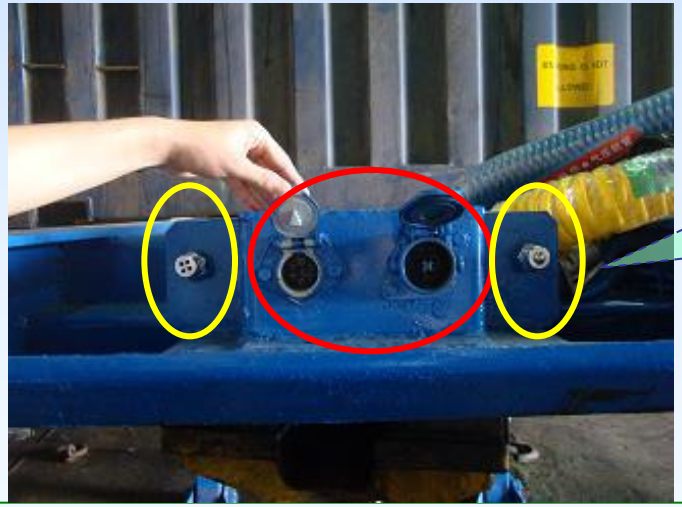


3. Based on China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION , constructing seamless integrated logistics system

- Uniform technical standard

  For the unhindered butt- joint between different nationality semi-trailer and tractors， reducing the potential safety hazard and technology failure when the semi-trailer drives on foreign road，truly realizing the seamless connection，the governments of China and South Korea should select several version of cars which are suitable for Trailer chassis transportation without a tractor

  ,or build the standards of adapted technical improvement between the two countries, like semi-trailer's pneumatic braking system, lighting, marking, and so on.



Double pneumatic braking system

3. Based on China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION , constructing seamless integrated logistics system

- The numbers of tractors and semi-trailers should be allocated scientifically and rationally.

  In the business of CHN- KOR SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION， Semi trailer and container are relative binding， the tractor is relatively flexible . Because the container needs turnaround time for import and export, so, the number of semi trailer in the configuration should be larger than the corresponding tractors. According to the experience， We believe that on the line of Weihai -- Inchon, tractors and semi-trailers are approximately disposed in accordance with the 1:3 to the 1:4， that not only can meet the demand of turnover, but also avoid the waste of resources.

3. Based on China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION , constructing seamless integrated logistics system

3.4 Establish logistics information network system of Drop-and-Pull transport

- Establish information network system

Constructing information resource sharing platform， can implement transmission of CHN-KOR SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION information in the whole logistics process. Seamless combination between public information platform and information system of the supply chain， can provide more accurate, comprehensive, timely information sources for the enterprises .It ‘s helpful for them to have more reasonable production arrangement and adjustment .

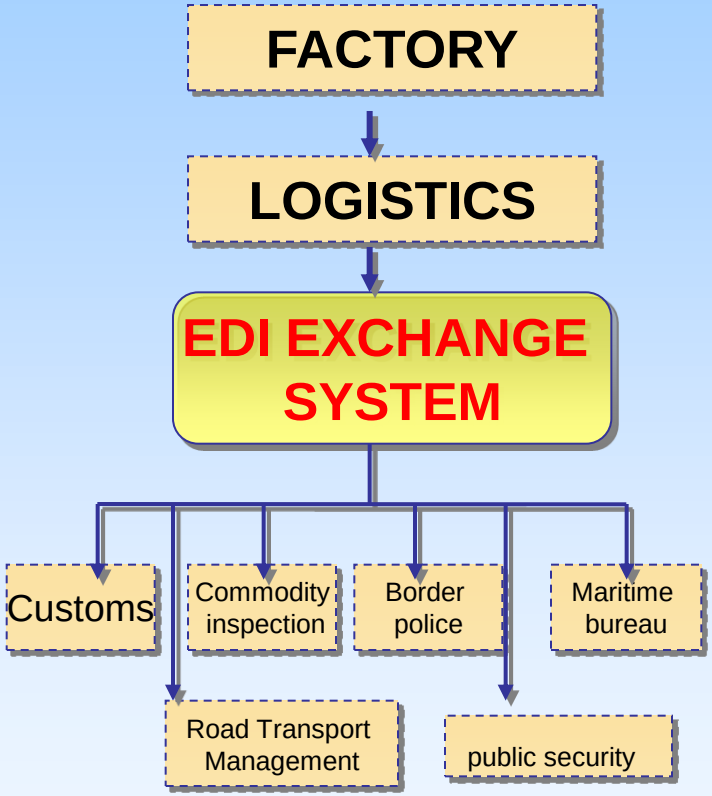


3. Based on China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION , constructing seamless integrated logistics system

- Establish electronic port system to declare Drop-and-Pull transport information

  China and South Korea should establish a EDI exchange system suiting each inspection departments， and design a universal EDI format of Drop-and-Pull transport.

  The enterprises only need to upload the EDI packet one time，including customs, commodity inspection, border police , Road Transport Management ,maritime bureau of China and South Korea， all can get the data from this system .



3. Based on China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION , constructing seamless integrated logistics system

- By using GPS (Global Positioning System), RFID (radio frequency identification) technology , the more efficient, scientific, rigorous management of Trailer chassis transportation without a tractor will be realized.

By using GPS network, we can implement the entire process dynamic management of the Trailer chassis transportation without a tractor.

By making RFID tags on containers and equipment, logistics enterprises can control equipment and tracking， and Customs can implement the supervision of Semi Trailer.

4. The update of China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION

and the problems should be solved







4. The promoting situation of China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION and the problems should be solved

Taked the lead by Ministry of transport of the People‘s Republic of China (MOT) , the project of China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION started in the research of the vehicle logistics between China and Korea ,in September,2004.

After China and South Korea transportation department representatives initialed" **AGREEMENT BETWEEN THE GOVERNMENT OF THE PEOPLE’S REPUBLIC OF CHINA AND THE GOVERNMENT OF THE REPUBLIC OF KOREA ON SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION** " and" Protocol“ in Chengdu， in the third China-Japan-Korea Conference of Ministers of transport and logistics in may,2010.

Following, governments of the two countries formally signed the " Agreement" and" Protocol" in Weihai, China, in September 7, 2010.The two sides have agreed that Trailer chassis transportation without a tractor shall be in the first phase of CHN-KOR SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION. It would be carried out first in Shandong, as a pilot.

4. The promoting situation of China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION and the problems should be solved

4.1 The staged achievement at present

Led by MOT , the competent department of Shandong province and Weihai city， Since the project of CHN-KOR SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION auto cargo transport is carried out ， Weidong ferry, as a pilot of transport, has been sourcing cargoes actively which are suitable for Trailer chassis transportation without a tractor. After sometimes' operating , we have accumulated some experience for the next step ,and obtained some achievements .

4. The promoting situation of China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION and the problems should be solved

Until June 1, 2012，
The total numbers of import and export:
264 TEU
（ import: 132, export: 132）



Chinese semi-trailers entry and exit 8 times,
Korean semi-trailers entry and exit 256 times.
Total weigh :889 tons,
(import: 819 tons, export :70 tons)

Goods mainly to fish, accounted for about 70%,
large size stone goods accounted for about 24%,
electronic goods accounts for about 6%.

Total value: $6,200,000.



4.2 The problems should be solved

Although CHN-KOR SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION has scored some achievements at present, it still faced many problems, there are certain distances between the establishment of seamless integrated logistics service system .

In order to achieve the seamless integrated logistics system, we recognize that there are several problems must be resolved now：

4. The promoting situation of China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION and the problems should be solved

- **Policies and regulations need to be further improved**

  Now we do not have a new set of practical rules between the two countries for the SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION, especially in the insurance, international road transport qualification examination, quarantine and so on.

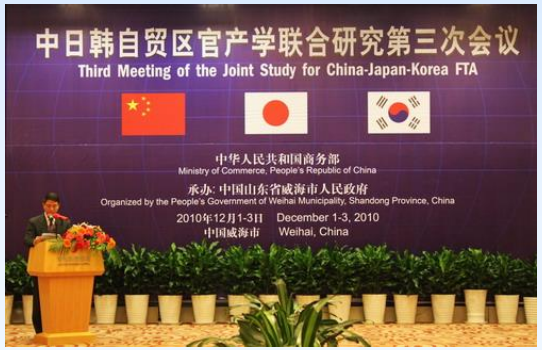
- **The policy must be further developed and implemented by the government**

  the government should give the encouragement to the advanced Logistics mode because it is good for the economic development and the mode can also save the energy and reduce the emissions. However, there is not administrative fee waiver policy towards China and Korea Trailer chassis transportation without a tractor. Without economic and policy guidance and stimulation, in the primary stage for the Trailer chassis transportation without a tractor, there is a lack of incentive of using Drop-and-Pull transport

5. Benefit from CJK FTA and Shandong Economic Cooperation Demonstration Zone ,

promote construction of China- Korea seamless integrated logistics system







5.1 **The Chinese government has launched a series of favorable policies to promote the logistics industry**

The Chinese government has launched a series of favorable policies to promote the Automobile Cargo SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION in《**The State Council** 's **notification of the logistics industry restructuring and revitalization planning**》and《**General office of the State Council's opinion about the policy and measures on promoting the healthy development of logistics industry** 》， that has laid a solid foundation for us to establish seamless, integrated logistics service system.

The Keys in the《 Notification 》《 Opinion 》:

- **We should vigorously promote logistics service to be socialized and professional**
- **Promote the traffic to be more convenient**
- **Advanced logistics technology innovation and Application**

- **Build logistics standards and Technology Extension Engineering**

- **In the premise of effective supervision, all relevant departments should simplify the procedures of approval, optimize process of customs clearance, implement the electronic declaring procedures and the" one-stop" services, improve efficiency of customs clearance .**

5.2 Shandong Province also offered some helpful policy to construct seamless integrated logistics service system, in the report <**The provincial government 's special conference about China-Japan-Korea economic cooperation demonstration zone construction >**.

For example：

- The government of Shandong province puts forward a tentative idea to build the economic partner city between WEIHAI – INCHON, and QINGDAO –PUSAN.
- The government of Shandong province plans to give preferential policies on the construction of China- Korea Industrial Park . （ The key multilateral cooperation projects that three countries' governments have agreed, will be experimented first in the industrial park.）

Overview :

China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION is really an advanced Logistics mode, which Lay the foundation to implement the Vehicle logistics between the two countries.

The Vehicle logistics can let the passengers travle with their cars and it can also provide the service of Vehicle cargo.In fact ,it can not only get the purpose of Cost saving, Energy saving and emission reduction, improving the efficiency of logistics, but also advantageous to provide the Seamless Integrated Logistics of door to door .We should improve the level of Chinese logistics by perfecting the Seamless Integrated Logistics network to promote industrial upgrading and Integration, with the help of China-Korea SEA-LAND INTERMODAL FREIGHT VEHICLE TRANSPORTATION.

As a member of the Logistics enterprise, Weidong has the ability to carry out the policy between two countries and try our best to popularize the Trailer chassis transportation without a tractor.

Seamless and Integrated Northeast Asia Distribution System

- Japan, China, Korea Mutual Chassis Transportation -

16th July 2012

NIPPON EXPRESS CO., LTD.

Jiro NAKAMURA

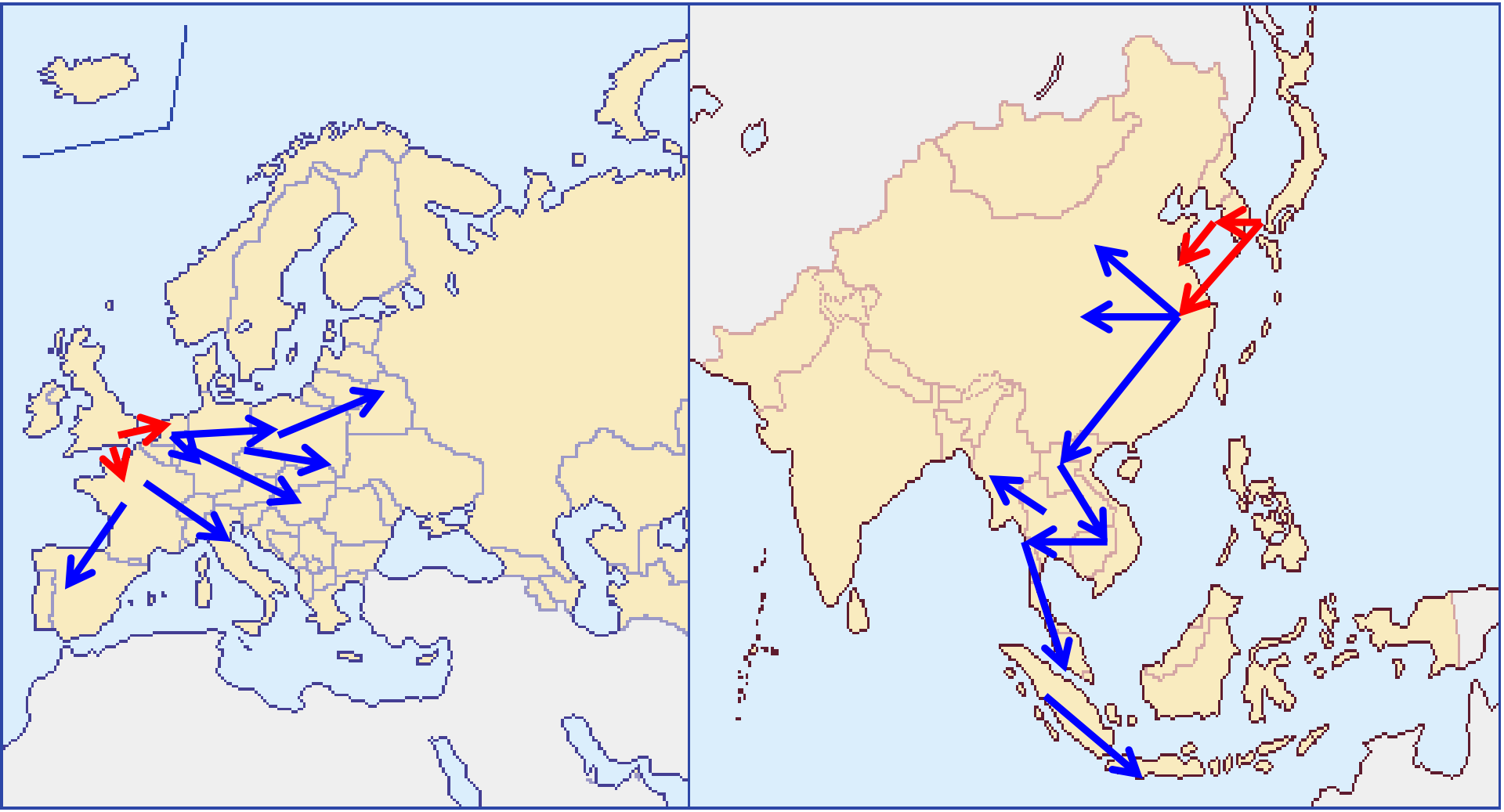
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United Kingdom and Japan's geopolitical location and distribution

日本通運 NIPPON EXPRESS With Your Life

U.K. in Europe

Japan in Asia



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Japan ⇔ China

- Shanghai Super Express（SSE）
- Shanghai Shimonoseki Ferry（SSF）
- Orient Ferry



Japan ⇔ South Korea

- Camellia Line（Hakata - Pusan）
- Kampu Ferry (Shimonoseki - Pusan)

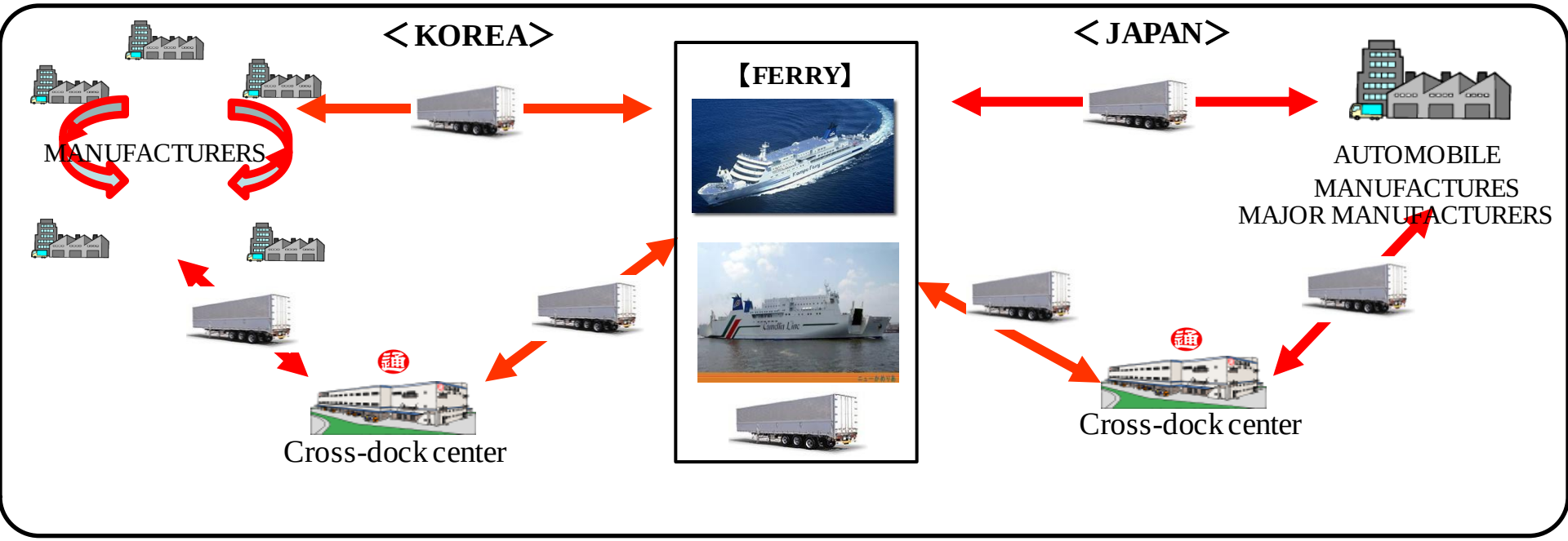






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How should seamless distribution look?



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Drastic change of logistics flow

日本通運 NIPPON EXPRESS With Your Life

Current logistics

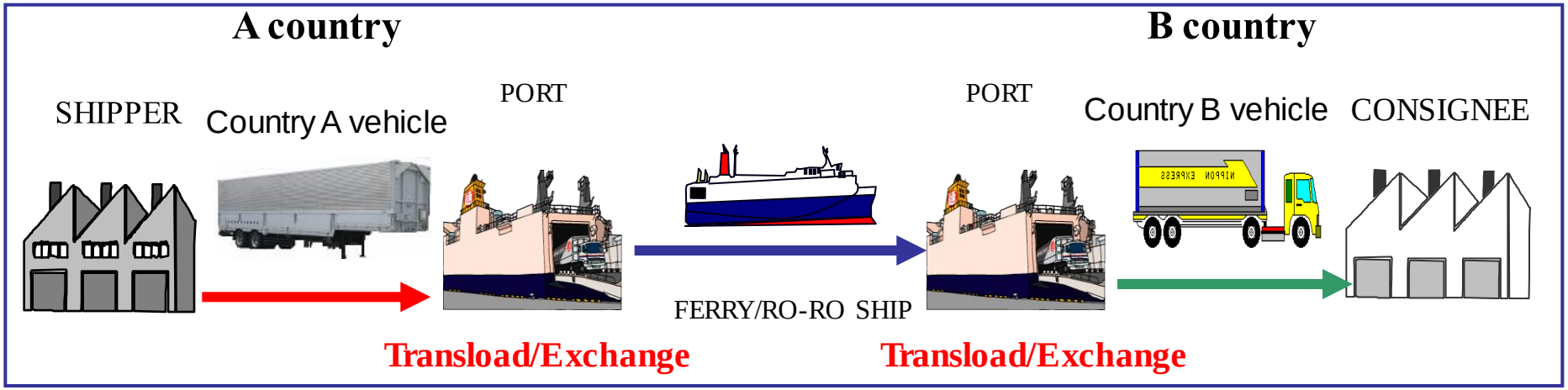
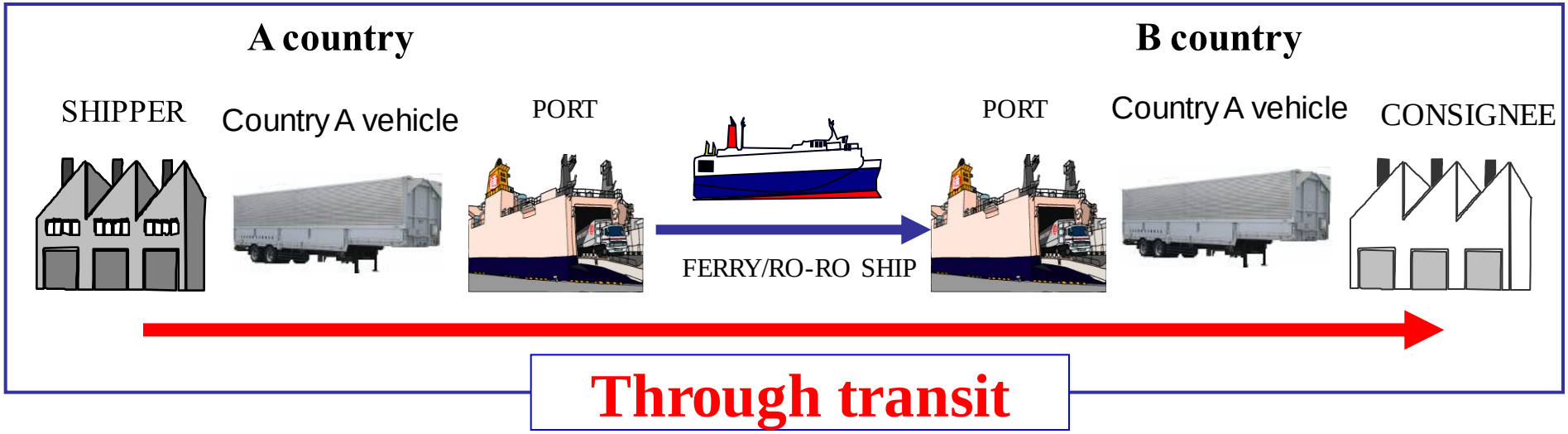


Image of "SEAMLESS" distribution



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The benefits of seamless distribution

1. Reduce operation costs
2. Keep cargo quality
3. Reduce packing costs



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Free passage of trailers

Special vehicles carrying live fish or semiconductor equipment and other limited vehicles can drive in South Korea with a Japanese license plate.





Other example achieved (general trailers)

During the Japan-South Korea Pilot Project evaluation period of September 2011 to March 2012, Nippon Express arranged to drive its wing chassis directly onto South Korean roads.

Due to safety measures under traffic safety rules and regulations in both countries, vehicles with Japanese license plate cannot be driven directly on to South Korean roads now.



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Double license plate chassis

Benefits of adoption

1. Meets automobile safety standards in both countries.
2. No need to reload vehicles – can drive freely in either country.

Barriers to adoption

1. Creating a procedures of registration for double license plates
2. Automobile registration costs must be paid in both countries.





This plan will be carried out after adjusting among both Governments.

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Side open containers using a RoRo Vessel

Benefits of adoption

1. Same loading as a “wing chassis” – Allows for loading/unloading operations
2. Ro/Ro Vessels help reduce required operation time.
3. Reduces time until delivery by allowing the container to get out faster.
4. The one container can serve multiple end users.
5. Helps bring us closer to seamless distribution.







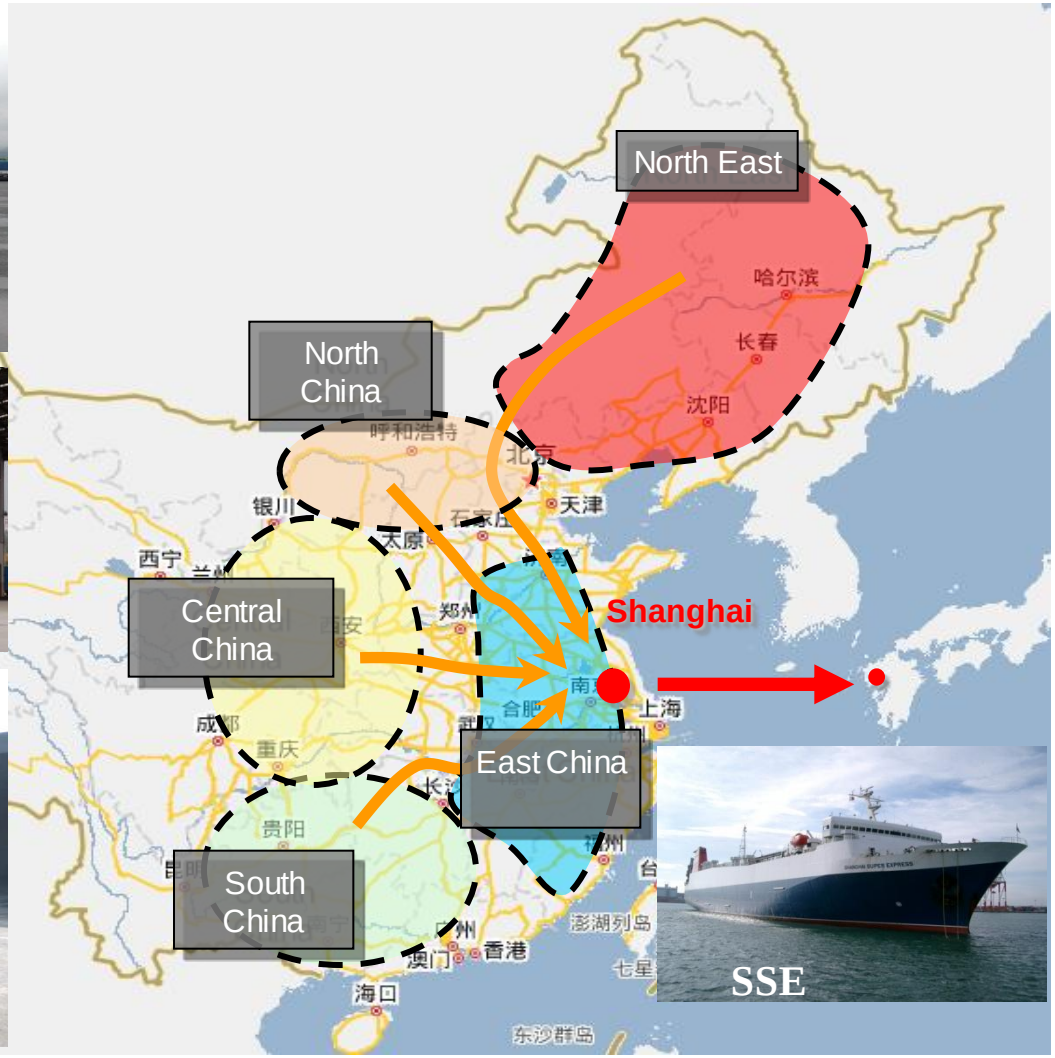
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Expand new service to China by double license plate chassis, and side open container / Future Action









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Implementing seamless distribution

STEP1	Introduce side open containers



STEP2	Introduce double license plate chassis



STEP3	Realize shared use with a single license plate

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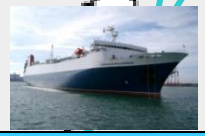
Prospects for growth in Asia from Northeast Asia distribution

日本通運 NIPPON EXPRESS With Your Life

SS7000 ROUTE

SHANGHAI ⇔ SHENZHEN, GUANGZHOU	2,000km
SOUTH CHINA ⇔ HANOI	1,500km
HANOI ⇔ BANGKOK	1,500km
BANGKOK ⇔ SINGAPORE	2,000km

Shenyang
Tianjin
Qingdao
Hakata
Shanghai
SSE



HAKATA ⇔ SHANGHAI 28HRS

New Deli
Chengdu
Chongqing
Guwahati
Imphal
Kunming
Aizwal
Kolkata
Dhaka
Hanoi
Mandalay
Chiang Rai
Chiang Mai
Vientiane
Yangon
Bangkok
Chennai
Phnom Penh
Hochiminh
Port Kelang
Kuala Lumpur
Singapore

MEKON-INDO EXPRESS

LAND : Bangkok → Port Kelang
SEA : Port Kelang → Channai

SEA & AIR

AIR :Dhaka → Hong Kong
SEA:Hong Kong → TOKYO, OSAKA

Ping Xian(China
Hyngi(Vietnam
Lao Bao (Vietnam si
Den Sawan(Laos sid
Savannakhet(Laos
Mukdahan(Thai s

ASEAN Ocean Route



ASEAN Loop route

SOUTHERN MECON EXPRESS

Bangkok⇔PnomPenh
⇔Ho Chi Minh city T.T.L. 820km

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E N D

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Developing Northeast Asia Logistics Information Service Network among China, Japan and Korea

Busan,Korea
2012/7/16

NEAL-NET
Northeast Asia Logistics Information Service Network
东北亚物流信息服务网络

NEAL-NET Establishment

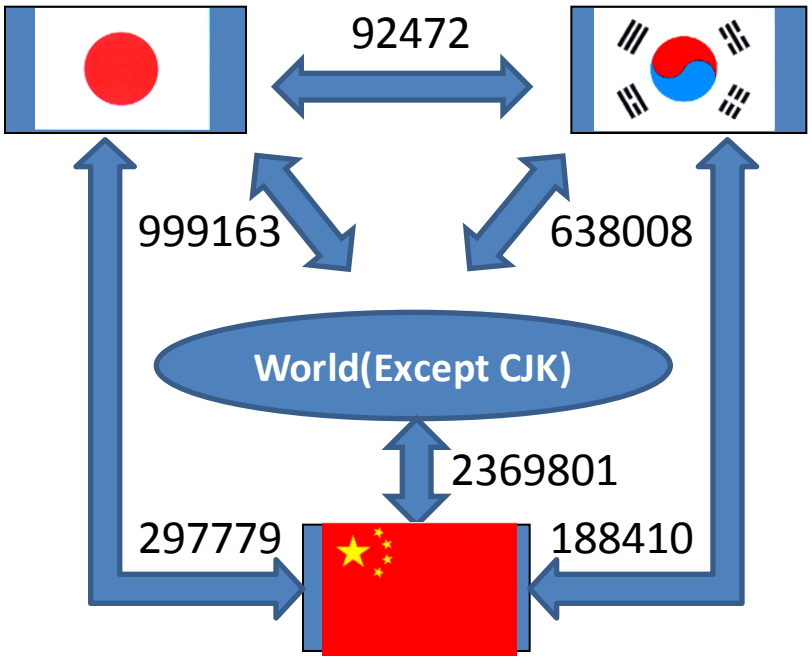
The 5th China-Japan-Korea Leaders Summit

May 2012, The 5th China-Japan-Korea Leaders Summit was held in Beijing China， Chinese Premier Wen Jiabao, Japanese Prime Minister Yoshihiko Noda and South Korean President Lee Myung-bak presented the meeting and announced declaration:



Welcomed the progress made by the three countries in developing sea-land combined transportation and establishing the Northeast Asia Logistics Information Service Network and encouraged the logistics information sharing technology research and expedited service application and the expansion of the network.

Importance of the Three Countries' Trade



Volume of trade among China, Japan and Korea(2010)

Unit: Million USD

: IMF, JETRO

- 3 Countries' population consists 74% of Northeast Asia, 22% of World
- 3 Countries' economic aggregate consists 90% of Northeast Asia, 20% of World
- 3 Countries' volume of trade consists 70% of Northeast Asia, 20% of World

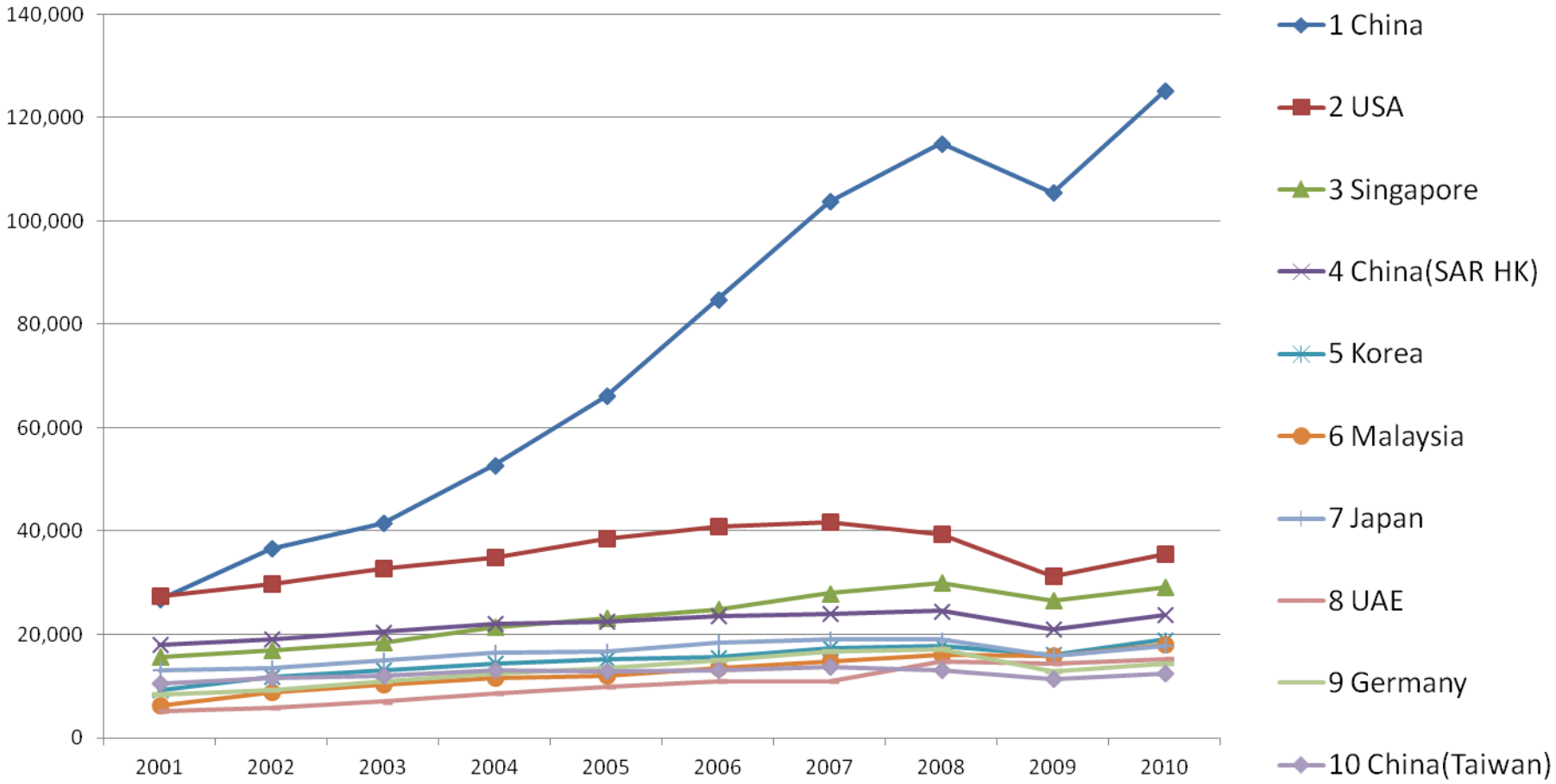
- The three countries grew rapidly from 130 billion to 690 billion from 1999 to 2011. China has become the largest trade partner of Japan and Korea. At the same time, Japan and Korea is 4th and 6th largest trade partner of China. Japan and Korea are the most important source of foreign investment. By the end of 2011, the aggregated direct investment of Japan and Korea to China is 80 billion and 50 billion

Ref: The trilateral cooperation (1999-2012) white paper of China, Japan and Korea

Vigorous Needs of Logistics Service

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Container throughput grows rapidly



- Container throughput among China, Japan and Korea is **1.617 Billion TEU**(2010), accounts for **32.12%** of world
- Compare with Year 2001， China is 466.3% of 2001, Korea is 204%, Japan is135%

Unit: 1000TEU
Ref： Containerisation International Yearbook 2012

Vigorous Needs of Logistics Service

- The three countries occupy 17 ports in the top 50 container port league in the world

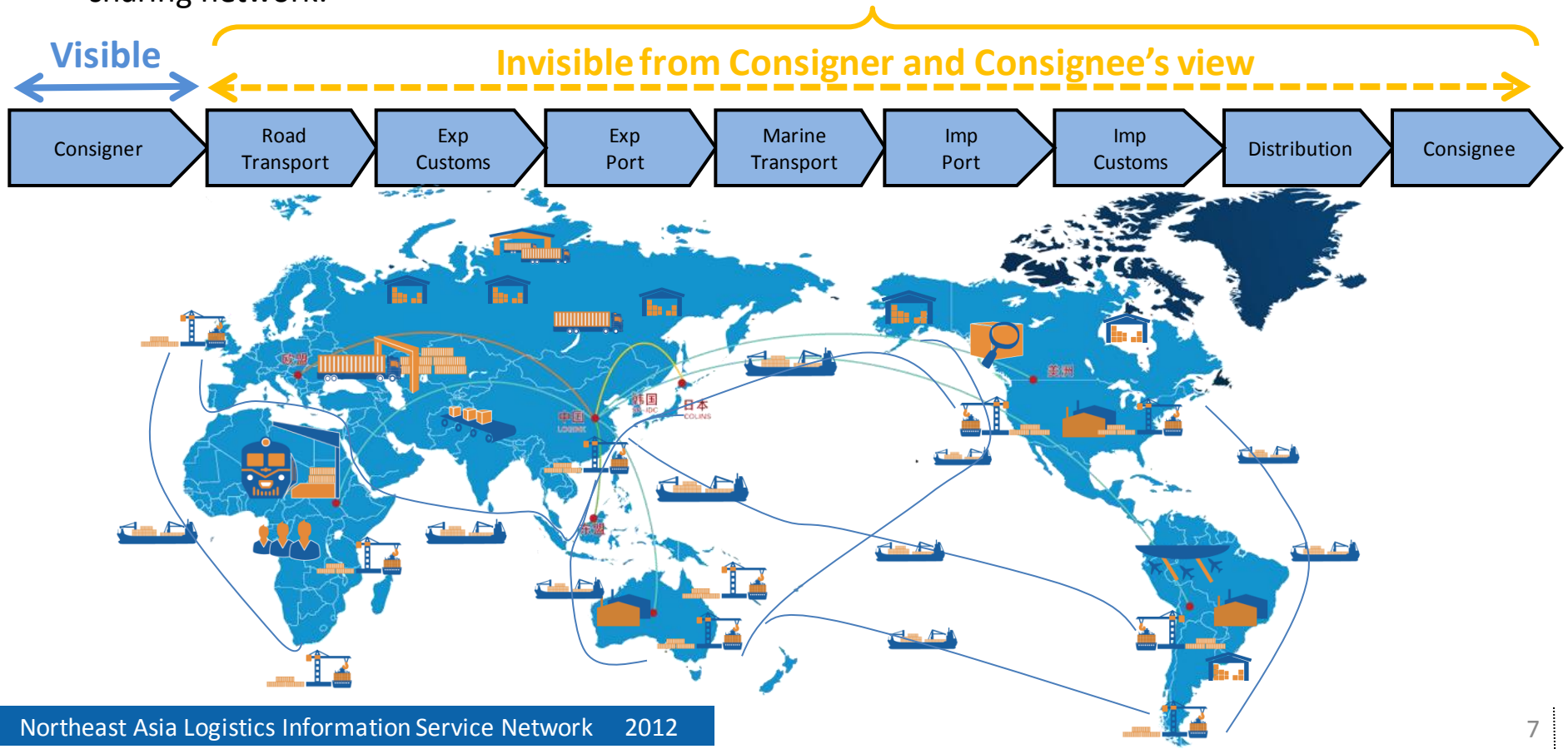
Rank	Port Name	2006	2007	2008	2009	2010	Share	Growth Rate
1	Shanghai	21,710	26,150	27,980	25,002	29,069	5.80%	134%
3	Hong Kong	23,539	23,998	24,494	21,040	23,699	4.70%	101%
4	Shenzhen	18,469	21,099	21,414	18,250	22,509	4.50%	122%
5	Busan	12,030	13,270	13,453	11,980	14,194	2.80%	118%
6	Ningbo	7,068	10,257	11,226	10,502	13,144	2.60%	186%
7	Guangzhou	6,600	10,791	11,001	11,190	12,550	2.50%	190%
8	Qingdao	7,702	9,900	10,320	10,260	12,012	2.40%	156%
11	Tianjin	5,950	9,360	8,500	8,700	10,080	2.00%	169%
12	Kaohsiung	9,775	9,200	9,677	8,581	9,181	1.80%	94%
19	Xiamen	4,019	4,627	5,035	4,680	5,820	1.20%	145%
21	Dalian	3,212	4,642	4,503	4,552	5,242	1.00%	163%
26	Tokyo	3,969	4,060	4,156	3,810	4,284	0.90%	108%
29	Lianyungang	1,302	2,896	2,965	3,020	3,870	0.80%	297%
35	Yingkou	n/a	n/a	2,030	2,537	3,338	0.70%	n/a
36	Yokohama	3,200	2,610	3,481	2,797	3,280	0.70%	103%
46	Kobe	2,413	2,310	2,556	2,247	2,556	0.50%	106%
47	Nagoya	2,752	2,604	2,817	2,112	2,548	0.50%	93%

Ref: Containerisation International Yearbook 2012

To Solve the Problem of International Logistics Information Sharing

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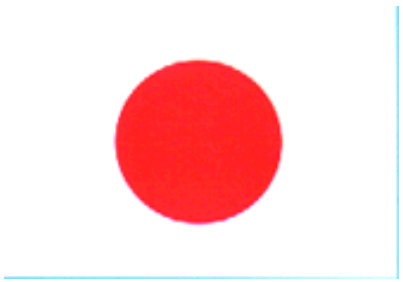
- Global trade requires real-time, controllable, high efficient and low cost logistics. Logistics information should be shared in order to satisfy the management requirement of logistics players engaged to improve competitiveness of trade and manufacturing.
- There many logistics players in international logistics activities. Information sharing barrier becomes bottle neck of logistics business. Core problem is that there is no logistics information sharing mechanism among countries, no logistics information sharing standards and no logistics information sharing network.



Establishment of NEAL-NET

为此中日韩三国建立了NEAL-NET合作机制，构建共享网络，制定物流信息共享标准，促进物流信息共享体系的形成。

China-Japan-Korea establishes NEAL-NET cooperative mechanism to establish sharing network, define logistics information sharing standard and promote to establish logistics information sharing structure.







Establishment of NEAL-NET





- On 2008, the 2nd Japan-China-Korea Ministerial Conference on Maritime Transport and Logistics was held in Japan, decided to set up a working group to carry out researches on the interconnection of logistics information.
- Mar 2010, the 3rd China-Japan-Korea Ministerial Conference on Transport and Logistics was held in China, which approved the proposal of establishing a Cooperative Mechanism on Northeast Asia Logistics Information Service Network .
- Dec 2nd 2010, Senior Government Officials of China, Japan and Korea meet in Hangzhou and signed the Memorandum of Understanding on the Cooperation Mechanism of Northeast Asia Logistics Information Service Network (NEAL-NET) and officially declared the establishment of NEAL-NET. The secretariat set in Hangzhou China.

性质：NEAL-NET是国际性的、非盈利的物流信息系统、交换和共享技术交流与应用合作机制。

Character：A transnational, non-profit cooperative mechanism for logistics information interchange, sharing and technical cooperation

目标：促进东北亚各国间物流信息平台互联互通，实现物流信息交换和资源共享。

Objective：Improve the overall logistics informationization level of Northeast Asia by creating interconnection platform and unified basic exchange standard

组织机构：联合指导委员会、理事会、秘书处、网络成员

Organization：Constituted by the Joint Steering Committee, the Council, the Secretariat and the NEAL-NET members

NEAL-NET Features & Development History





- Dec 3rd 2010, the 1st Council Meeting of NEAL-NET was held in Hangzhou. Reviewed and discussed the Work Report and Work Plan.
- Apr 25th-28th 2011, The 1st NEAL-NET Technical Meeting was held in Busan, Korea. Meeting focus on discussion of the pilot technology framework of container status and dynamic vessel status information sharing.
- Jun 19th-22nd 2011, The 2nd NEAL-NET Technical Meeting was held in Ningbo, China. The Three Countries achieved the agreement standard of dynamic vessel status and MOU was signed
- Oct 18th-20th 2011, the 3rd NEAL-NET Technical Meeting was held in Yokohama Japan. Early works of dynamic vessel status interface were summarized, and the relevant issues of the interface validation were planned. The standard of container status sharing was drafted. The discussion on the user management and authentication mechanism was started.

NEAL-NET Features & Development History





- During the 2nd ASEM Transport Ministers' Meeting, the initiative, which is to establish a corresponding cooperative mechanism, carry out technical exchanges on the standards for information networks and explore the possibility of the interoperability between Asia-Europe networks on the basis of the NEAL-NET, was agreed and incorporated into the conference declaration and action plan, namely the *Declaration of the 2nd ASEM Transport Ministers' Meeting On Green Secure and Efficient Asia-Europe Connection* and *ACTION PLAN on Facilitation of Movement of Goods and People Between Asia and Europe.*
- Dec 2011, NEAL-NET Logistics Information Sharing Service Interface Opening Ceremony was successfully held in Hangzhou.
- Mar 2012, The 5th NEAL-NET Technical Meeting was held in Jeju, Korea. User Management and Container Status Information Sharing issues were discussed.
- Jun 2012, The 6th NEAL-NET Technical Meeting was held in Beijing, China. Container Status Information Sharing standard was drafted. User Management and port expansion issues were discussed

NEAL-NET Technical Framework

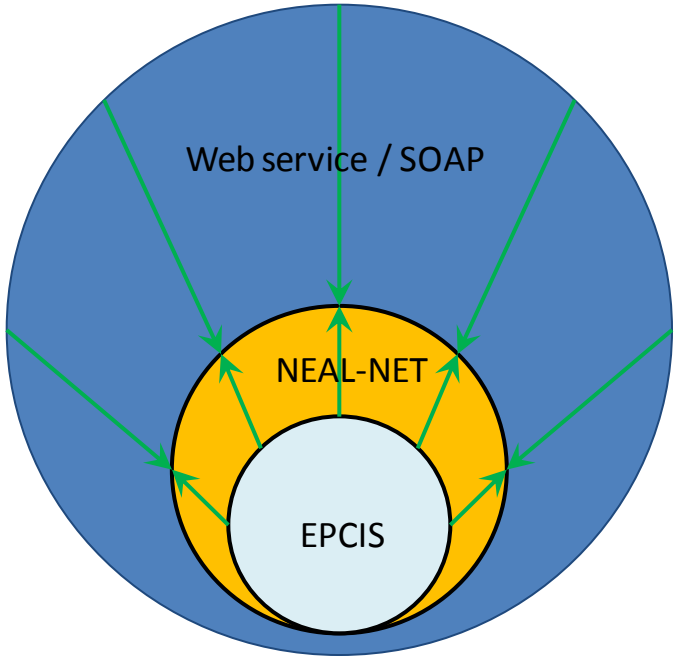
Work Ethic of NEAL-NET

1. NEAL-NET considers the logistics information sharing with a high level view throughout entire supply chain. Based on the analysis of logistics business of supply chain, NEAL-NET defined public logistics nodes, such as highway freight stations, airports, railway freight stations and ports.
2. The major task of NEAL-NET is to define the interface standards of each public logistics nodes. And then promote the logistics nodes to reform their interfaces in accordance with these standards to realize cross nodes data sharing.



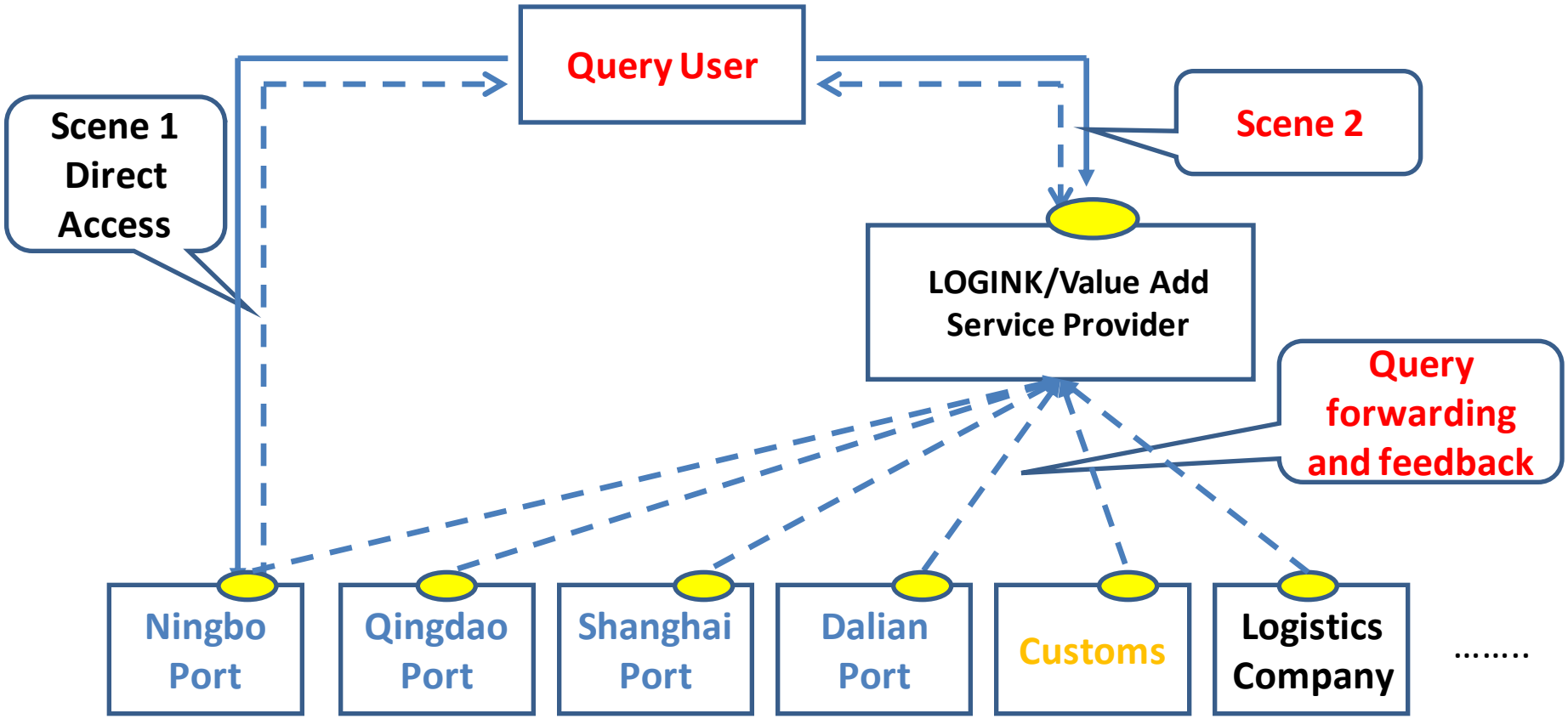
NEAL-NET Standard

- NEAL-NET's logistics information sharing standards including data elements, code sets and interface format. It is called NEAL-NET Standards.
- NEAL-NET Standards adopt a framework which is suitable for status sharing.
- Interface using Web Service and SOAP message for data transmission.

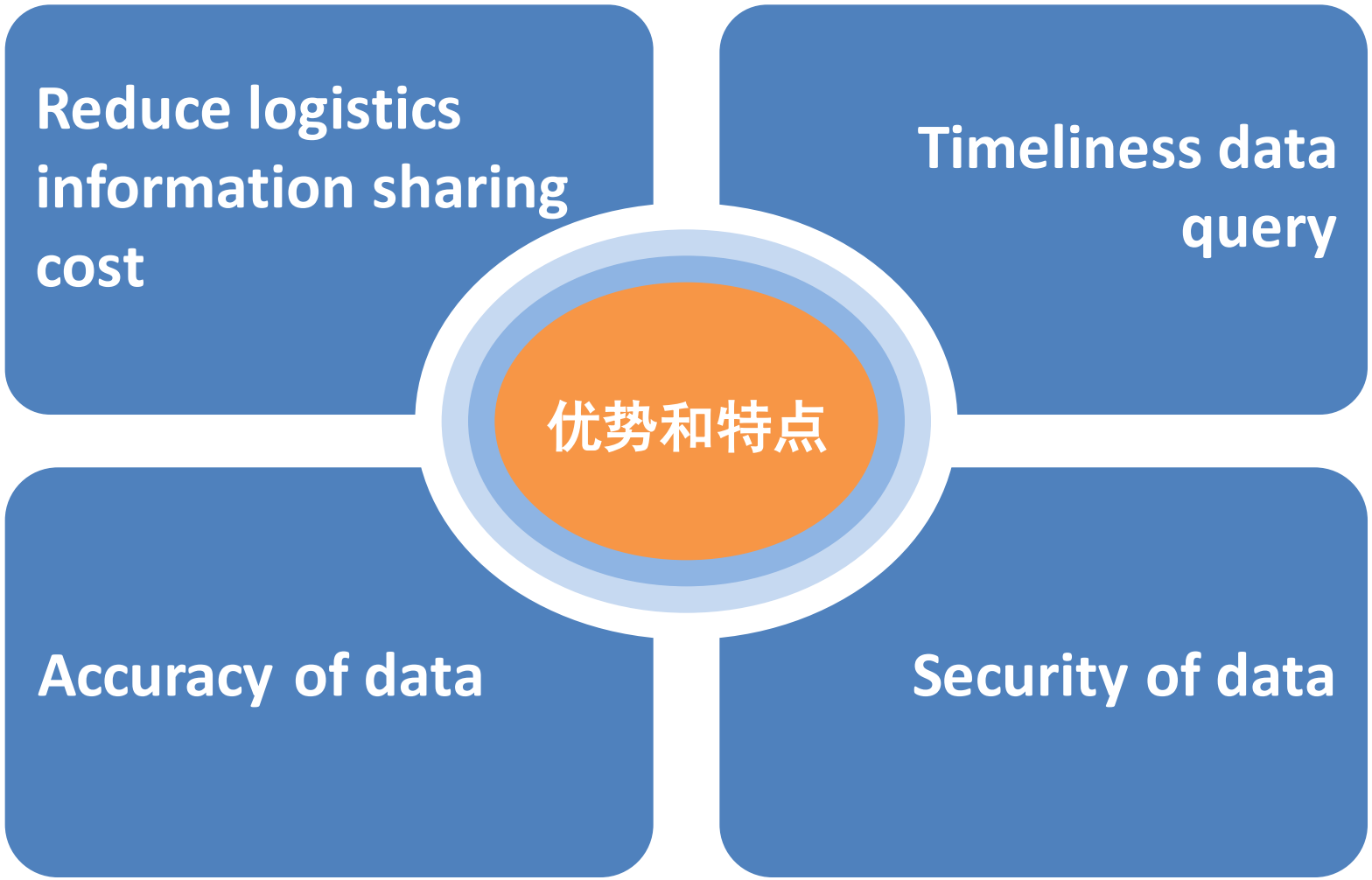


NEAL-NET Standard Usage Scenes

- There are 2 basic usage scenes of NEAL-NET Standards:
  - Scene 1. Query user directly call ports' interface which already adopted NEAL-NET Standards
  - Scene 2. Query user query data by using information provider's proxy service, after data integrated then feedback to query user.

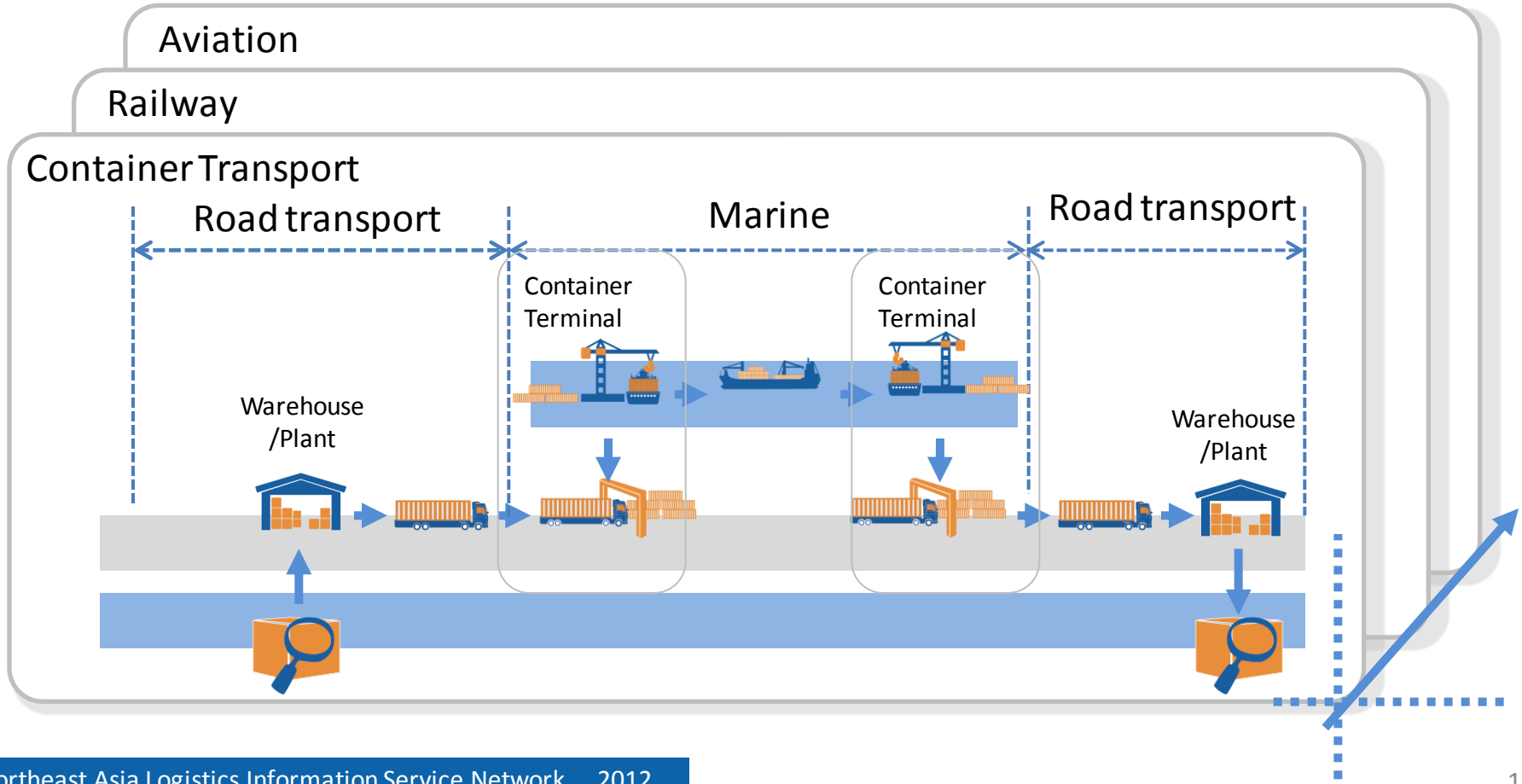


Pros of the Standard & Information Sharing Architecture



NEAL-NET Working Phases

- At current stage, NEAL-NET cooperation mainly focuses on International Marine Transport.
- In the near future, logistics information sharing could be expanded to aviation and surface transport area



NEAL-NET Port Logistics Information Sharing Pilot

Recent Works

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东北亚物流信息服务网络

The first phase of the project has entered a critical period that the interface implementation of dynamic vessel status sharing has been completed and under the link test and user evaluation.

第一阶段是动态船期信息共享

The second phase, which refers to **the Container Status Sharing**, has been launched already, and the pilot service is expected to open in the first half of next year.

第二阶段是集装箱信息共享

Port Logistics Information Sharing

◆第一阶段制定了集装箱船舶动态信息共享标准。

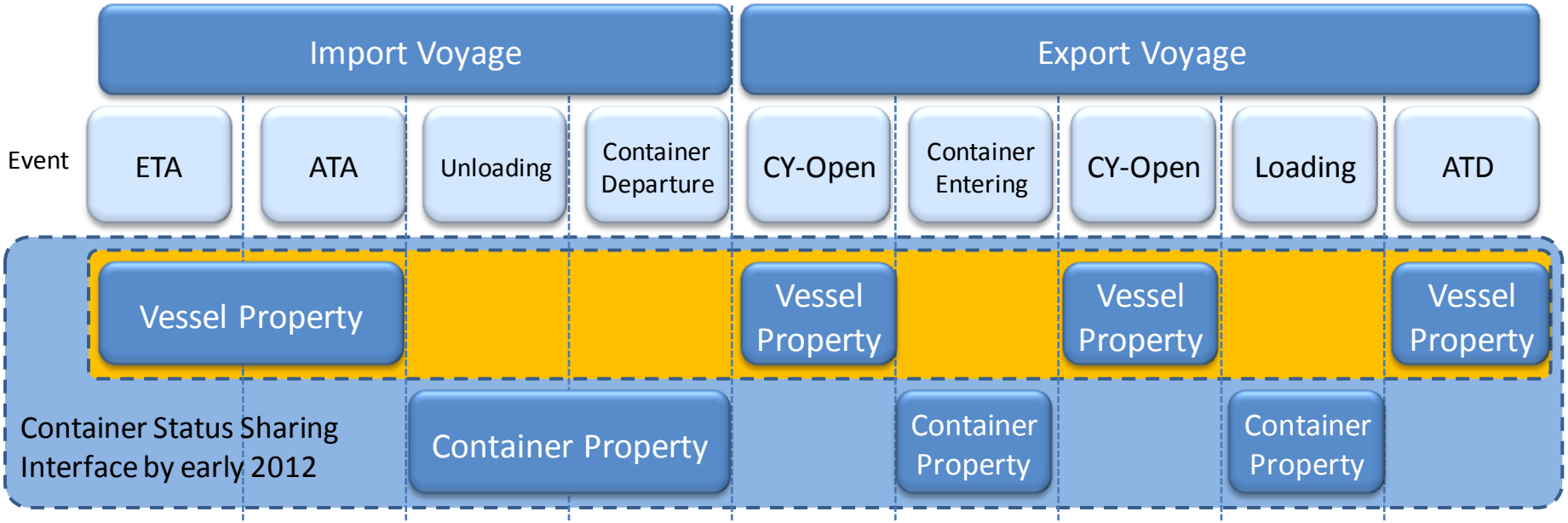
◆将集装箱和船舶相关信息抽象整理成下列9个基本事件。

- 船舶属性：预计抵港、实际抵港、进箱开始、进箱截止、离港
- 集装箱属性：装船、卸船、箱出港区、进箱

◆First step, we defined dynamic container vessel status sharing interface

◆9 basic events of dynamic vessel schedule and container status are abstracted and technical framework is designed.

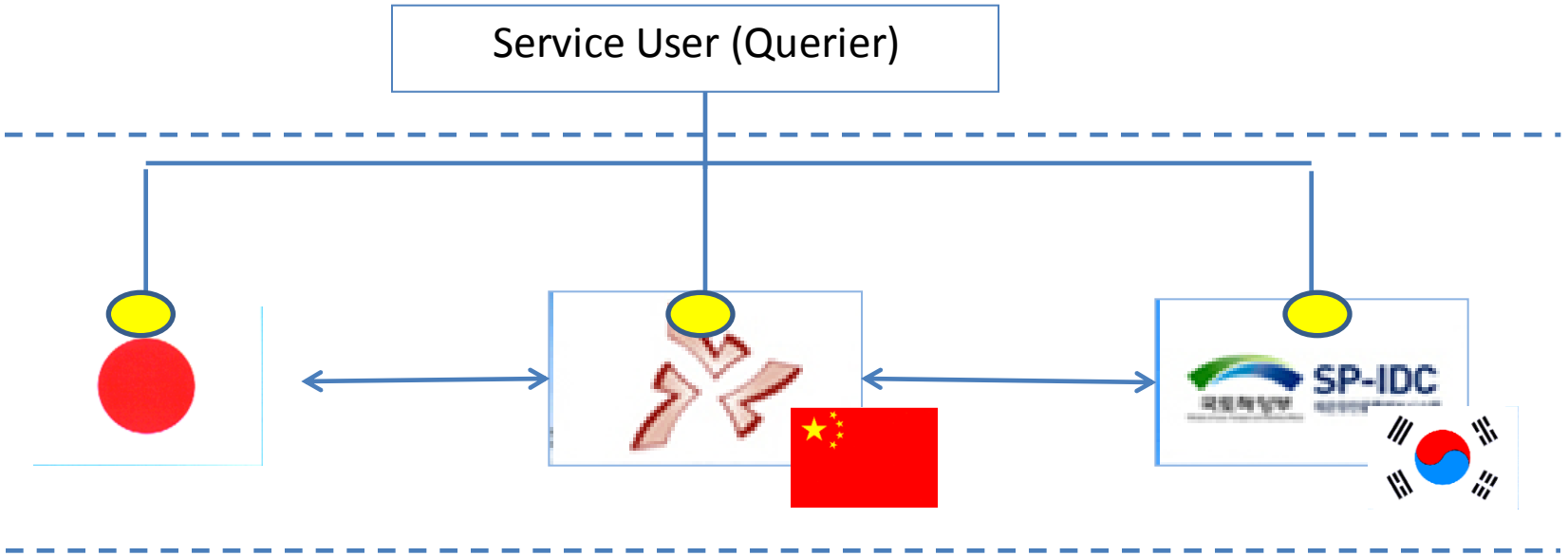
- vessel properties: ETA, ATA,CY-Open, CY-Cut and ATD
- container properties: Unloading, Container Gate Out, Container Gate In, Loading



Pilot details and Structure

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东北亚物流信息服务网络

- In order to evaluate the function of interface, pilot was undergoing by selecting typical platforms and ports in China, Japan and Korea respectively
  - Chinese side selects **National Public Information Sharing Platform for Transportation & Logistics (LOGINK)** and Ningbo-Zhoushan Port to join evaluation
  - Japanese side selects Tokyo-Yokohama Port to join evaluation
  - Korean side selects **SPIDC** as Korean plat form and Busan Port to join evaluation



#China, Japan and Korea platforms provide query interface of container status and dynamic vessel schedule which comply with NEAL-NET Standard.
#Evaluation target is container vessel only.

Dynamic Container Vessel Status Sharing Service

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#VesselName	#Voyage...	#IMONumber
COSCO NEW YORK	014E	IMO9335185
COSCO NEW YORK	014E	IMO9335185
COSCO NEW YORK	014E	IMO9335185
COSCO NEW YORK	014E	IMO9335185

船名
Vessel Name

航次
Voyage Number

IMO号
IMO Number

Business step
urn:un:unece:uncefact:codelist:standard:UNECE:StatusCode:139
urn:un:unece:uncefact:codelist:standard:UNECE:StatusCode:24

船舶状态
Vessel Status

occurred	recorded
2011-11-30T11:59:08.000+08:00	2011-11-30T11:59:08.000+08:00
2011-11-30T11:59:08.000+08:00	2011-11-30T11:59:08.000+08:00
2011-11-11T13:00:00.000+08:00	2011-11-12T06:46:47.000+08:00
2011-11-12T00:35:00.000+08:00	2011-11-12T06:46:47.000+08:00

状态发生时间
Status Occurred Time

状态记录时间
Status Recorded Time

Business location
urn:un:nealnet:codelist:standard:UNCEFACT:SubLocationCode:CNNGB.BLCT4
urn:un:nealnet:codelist:standard:UNCEFACT:SubLocationCode:CNNGB.BLCT4
urn:un:nealnet:codelist:standard:UNCEFACT:SubLocationCode:CNNGB.BLCT4
urn:un:nealnet:codelist:standard:UNCEFACT:SubLocationCode:CNNGB.BLCT4

状态发生地点
Status Occurred Location

#EstimatedTimeOfArrival	#EstimatedTimeofBerthing	#EstimatedTimeofDeparture
2011-11-10T00:00:01.000+08:00		
		2011-11-11T23:59:59.000+08:00
2011-11-11T12:30:00.000+08:00		2011-11-12T00:30:00.000+08:00
2011-11-11T12:30:00.000+08:00		2011-11-12T00:30:00.000+08:00

预计抵港时间
ETA

预计靠岸时间
ETB

预计离港时间
ETD

#CyOpenDateTime	#CyCutDateTime	#LastPortCode	#NextPortCode	#Course.
2011-11-04T10:00:01.000+08:00	2011-11-09T20:00:01.000+08:00	CNYSG	JPYOK	CNUSE
2011-11-04T10:00:01.000+08:00	2011-11-09T20:00:01.000+08:00	CNYSG	JPYOK	CNUSE
2011-11-04T10:00:01.000+08:00	2011-11-09T20:00:01.000+08:00	CNYSG	JPYOK	CNUSE
2011-11-04T10:00:01.000+08:00	2011-11-09T20:00:01.000+08:00	CNYSG	JPYOK	CNUSE

进箱开始时间
CyOpen Time

进箱截止时间
CyCut Time

上一港口
Previous Port

下一港口
Next Port

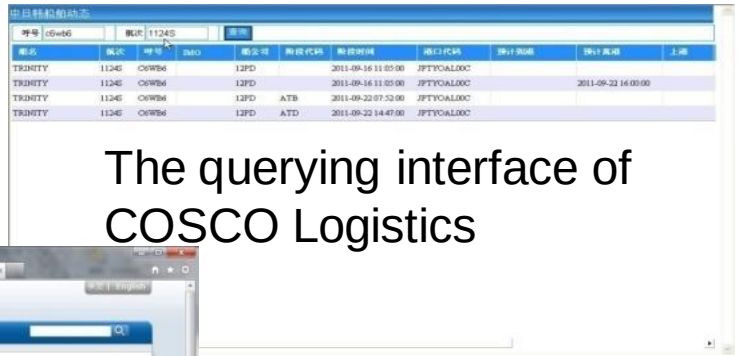
航线代码
Course Line

Client Development & Interface Evaluation

- In order to verify the validity of interface standards, we constructed query page of dynamic vessel status on the NEAL-NET home page. User can query the three countries' container vessel status.
- In addition, China side selected COSCON (E-commerce platform), COSCO Logistics (internal business system), Zhejiang Electronic Port (software of freight forwarder) and so on, had conducted the software interface reformation so as to query the interface. The functions of interface and standards were verified comprehensively. Reached first stage achievement and got highly appraise from user.



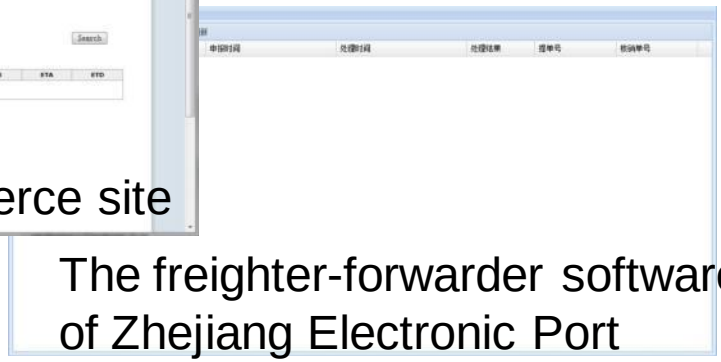
NEAL-NET home page



The querying interface of COSCO Logistics



COSCON E-commerce site



The freighter-forwarder software of Zhejiang Electronic Port

Client Development & Interface Evaluation

- Korea side: SP-IDC developed interface query page to evaluate the function of the interface. Pilot reached first stage achievement.



Client Development & Interface Evaluation

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东北亚物流信息服务网络

- Japan side: Colins developed interface query page to evaluate the function of the interface.
- Japan side finished linkage project of NEAL-NET Interface and center database. Pilot project reached first phase achievement.
- The 3 countries finished first stage pilot work.



NEAL-NET Port Service Coverage Extension Work Launched Rapidly

Domestic Ports Expansion Work Started

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- March 1st-5th , For the purpose of boosting the application of interconnection, promotion and training activities are carried out for the 13 pilot ports (except Ningbo-Zhoushan port) in accordance with the Notice of Effectively Promoting the Development of NEAL-NET that issued by MOT of China.



- Introduced NEAL-NET standards includes strategy, methodology, abstract processing, data elements, Vocabulary, and so on.
- Introduce developing process and experience in Ningbo port.
- Present effort in Ningbo Port and application in enterprises.
- Communicated developing requirement from MOT.

Domestic Ports Expansion Work Started

NEAL-NET
Northeast Asia Logistics Information Service Network
东北亚物流信息服务网络

- China side expedites ports interface reformation to expand NEAL-NET Port Logistics Information Sharing Service coverage.

No.	Port Name	Report work plan	Plan completion time (Dynamic Container Status)
1	Yingkou Port	Reported	July, 2012
2	Yantai Port	Reported	August, 2012
3	Weihai Port	Reported	August, 2012
4	Qingdao Port	Reported	August, 2012
5	Tianjin Port	Reported	August, 2012
6	Ningbo Port	-	Already finished
7	Guangzhou Port	Reported	August, 2012
8	Shekou Port	Reported	August, 2012
9	Xiamen Port	Reported	August, 2012

Planned to provide service after link test by the end of 2012

NEAL-NET Expedites Port Service Coverage Extension

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东北亚物流信息服务网络

- Korea declares to expand NEAL-NET Port Logistics Information Sharing Service Coverage to Gwangyang and Incheon Port by the end of 2012
- Japan declares to expand NEAL-NET Port Logistics Information Sharing Service Coverage to Kawasaki, Osaka and Kobe port by the end of 2012



Promote Asia-EU Cooperation

Cooperation Starts

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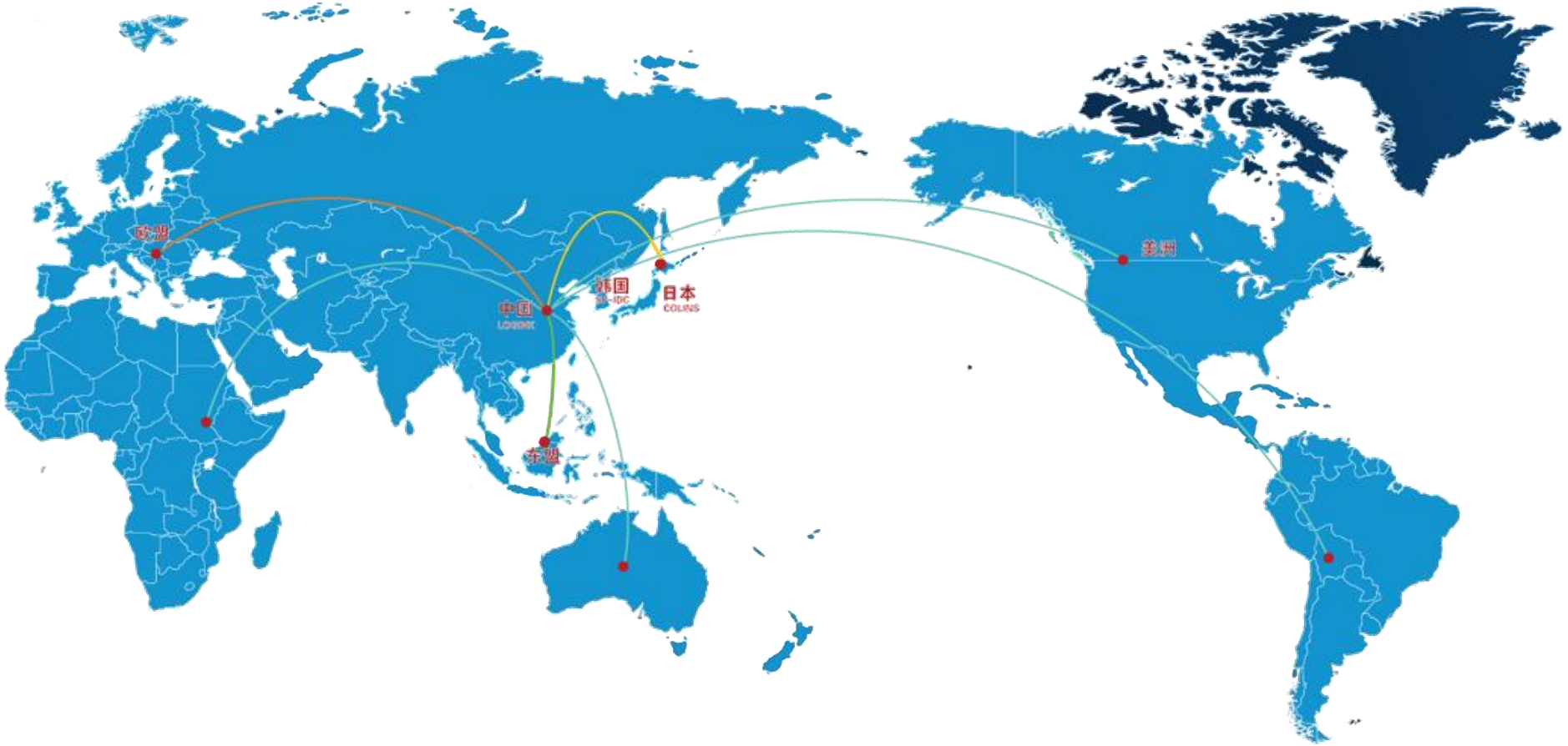
During the 2nd ASEM Transport Ministers' Meeting(ASEM-TMM),the initiative put forward by NEAL-NET, i.e."to establish a corresponding cooperative mechanism, carry out technical exchanges on the standards for information networks and explore the possibility of the interoperability between Asia-Europe networks on the basis of the NEAL-NET", was agreed and incorporated into the Ministers' Joint Declaration and ASEM-TMM Action Plan.





Sep 2012, Asia-European logistics information sharing cooperation meeting is planned to be held in Hangzhou China to discuss cooperation scope and plan

Future Regional Expansion



- Recently: Finish the three countries coverage;
- Middle phase: Expand to EU and ASEAN countries;
- Long Tem: Expand to Americans and other Regions.

NEAL-NET
东北亚物流信息服务网络

TRANSPORT AND LOGISTICS DEVELOPMENT FORUM CHINA JAPAN KOREA

To promote international logistics information sharing

under the China, Japan and Korea Transport & Logistics Ministerial Meeting Mechanism!

Welcome to Join NEAL-NET

Northeast Asia Logistics Information Service Network

Web site: www.nealnet.org

Email: secr@nealnet.org

Yusen Logistics

Efforts to establish System for Visualizing Cargo Movement

Monday, July 16, 2012
Busan, South Korea

Yusen Logistics Co., Ltd.

Shunichi Yano
Chairman of the Board

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About NYK

Trade name	NYK Line (Nippon Yusen Kaisha Line)
Established	1885
Head office	Tokyo, Japan
Gross sales	JPY 2,000,000 million (*FY2012 est.)
Number of employees	28,498 (as of Mar. 2012)
Business areas	Ocean carriers Containers, bulk carriers, PCCs, tankers, LNG, heavy lifters, cruises, etc. Logistics integrators
Subsidiaries	Yusen Logistics (59.77%) Nippon Cargo Airlines (100%) MTI (Monohakobi Technology Institute) and 672 other companies in all over the world

About "Yusen Logistics"
(established April 1, 2011)

Yusen Air & Sea Service

- Established: 1955
- Air and Ocean Freight Forwarding

NYK Logistics

- Established: 1983
- Contract Logistics (CL), Ocean Freight Forwarding

Integration:

- Japan: October 1, 2010
- Global: April 1, 2011 ~ December 31, 2012
- Countries: 37

Yusen Logistics

Yusen Logistics
A Member of the NYK Group

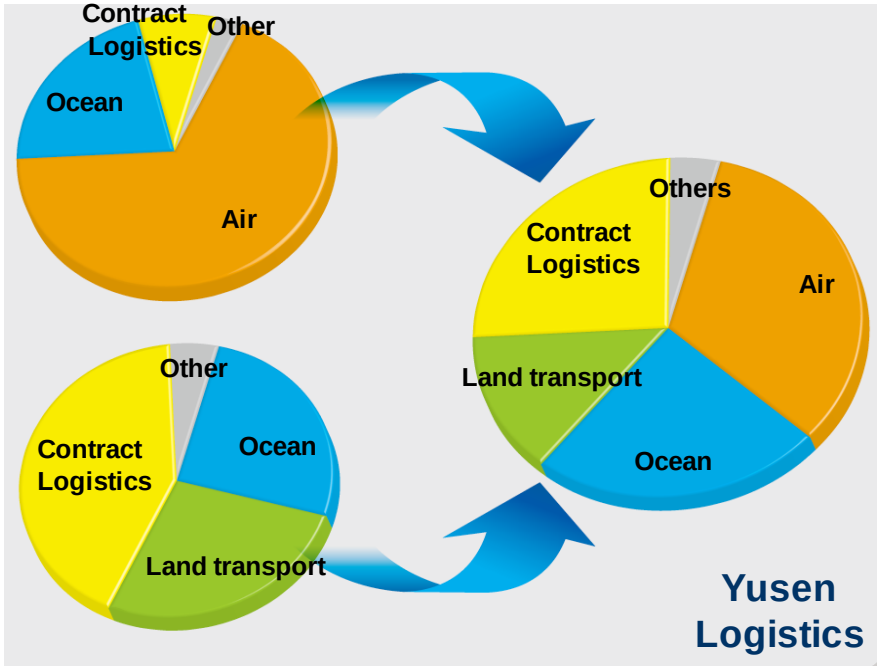
- Listed on first section of Tokyo Stock Exchange
  * NYK's share ⇨ 59.5%
- Consolidated revenue: JPY 370,000 million (*FY2012 est.)
  Ordinary profit: JPY 9,500 million (*FY2012 est.)
- Employees: 13,620 (as of March 31, 2012)

Revenue of "Yusen Logistics" Group

Revenue by Business Segment

Yusen Air (YAS) mainly on Air
NYK Logistics (NL) mainly on CL
➡ Balanced on Air/Ocean/CL+ LT

Yusen Air

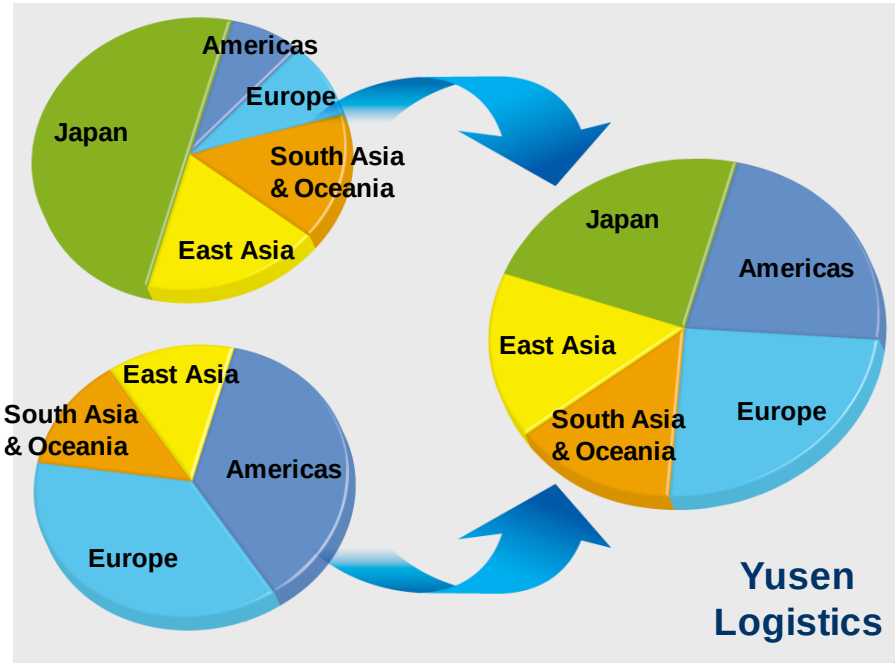


NYK Logistics

Revenue by Business Region

YAS: Strong in Japan
NL: Strong in Americas/Europe
➡ Regionally balanced

Yusen Air



NYK Logistics

About Myself

- 1969 Entered Nippon Yusen Kaisha (NYK Line)
  - 1977 New York Branch
  - 1994 Managing Director, NYK Singapore
  - 2002 Managing Director, NYK Line
- 2005 President, Yusen Air & Sea Service Co., Ltd.
- 2010 President, Yusen Logistics Co., Ltd.

- Currently working as…
  - Chairman of the board of Yusen Logistics Co., Ltd.
  - Vice chairman of Japan Aircargo Forwarders Association (JAFA)
    - GM of General Affairs Division of JAFA
  - Visiting professor at Tama Graduate School of Business

Objective of the Visibility

- Needs of Shippers/Consignees
  - Reduced man-hours and time for procedures
  - Centralized management of inventories irrespective of the transport operator
  - Fast and globally centralized monitoring of inventories not only in internal facilities but also outside facilities and in transit
  - Formulation of transport plans based on transport's track record and evaluation
  - Flexibility in changing destination, quantity and mode of transport
  - A system that issues an alert when the inventory may soon exceed or fall below the standard level
  - Etc.

=> The visibility is an indispensable tool.

Objective of the Visibility

- Supply Chain Efficiency
  - Lead time reduction
  - Inventory reduction
  - Reduction of losses of selling opportunities
  - Cost cuts
  - Prevention of irregularities; e.g., damage, loss, theft
  - Response to irregularities

Effect of cutting 59 billion yen (46 billion yen for exports and 13 billion yen for imports) in Japan's electric appliance exports and imports

- Lowering of environmental impact
- National security
- Consumer protection

What is to be Visualized?

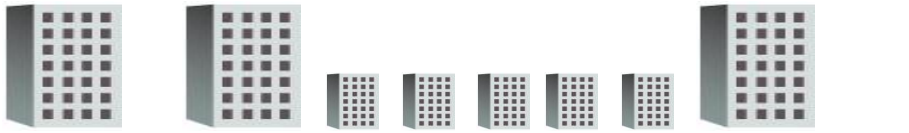
Management

for transaction, operation

Planning → Monitoring → Reviewing

Site fields

for cargo handling



Cost	Estimation, actual…
Cargo status	Inventory status, product data (country/place of origin, etc.)
Schedule	Truck, vessel, flight…
Who	Shipper, consignee, subcontractor…
What	Cargo, logistics materials…
When	Departure time, arrival time…
Where	Destination, yard location…
Why	Contract, purchase order
How	Process, condition (temperature, etc.)
Others	Operational environment information (data on congestion, weather condition, etc.)



Current State of the Visibility

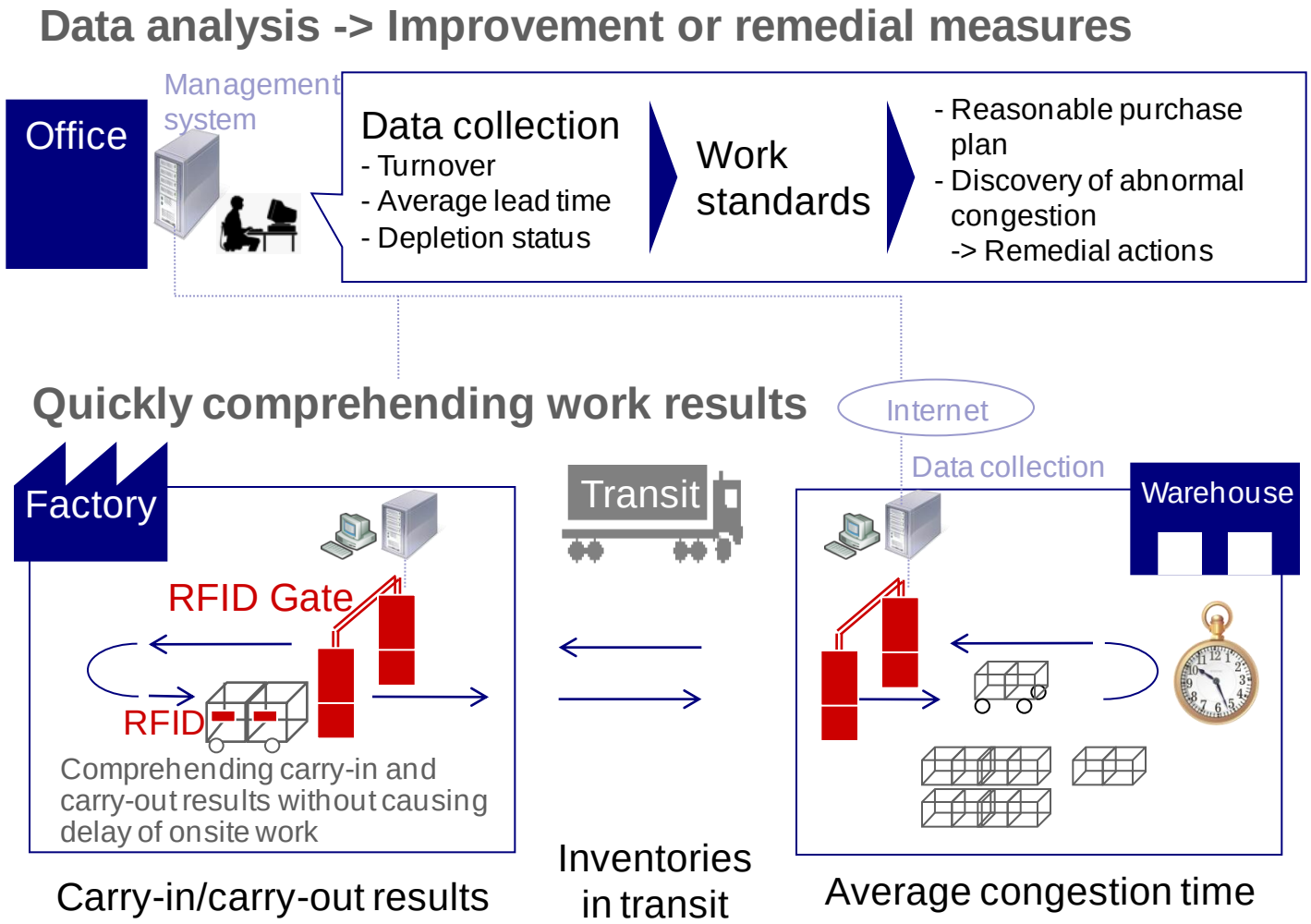
- Actions taken by shipping companies
  - Ships schedule
  - Containers movement
  - Management of cargo (automobiles) in terminals
- Actions taken by logistical operators
  - RFID-based storage/retrieval management
  - Logistics information visibility system (e.g., Yusen Logistics NEXT System)
  - CO_2 e-Calculator
- Actions taken by the government and public institutions
  - Colins

Transport Material Management Solution

Yusen Logistics

Level of planning and management

Level of onsite work

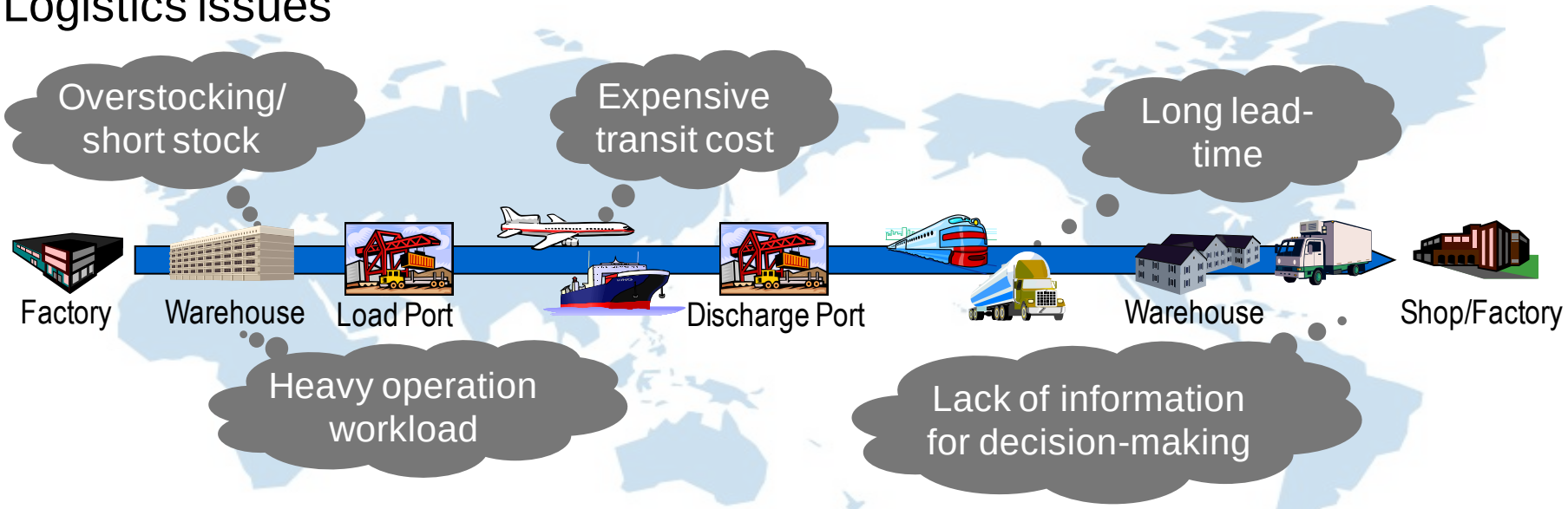


The ocean cargo management method (e.g., individual container management and work standards based on real data) is applied to management of small-sized transport materials such as goods-delivery boxes and pallets for transport of components.

YLK Solution for Logistics Issues

Yusen Logistics

Logistics issues



YLK provides the NEXT system as a solution for these issues.

What is NEXT?	NEXT is a system to integrate various logistics information in the supply chain.

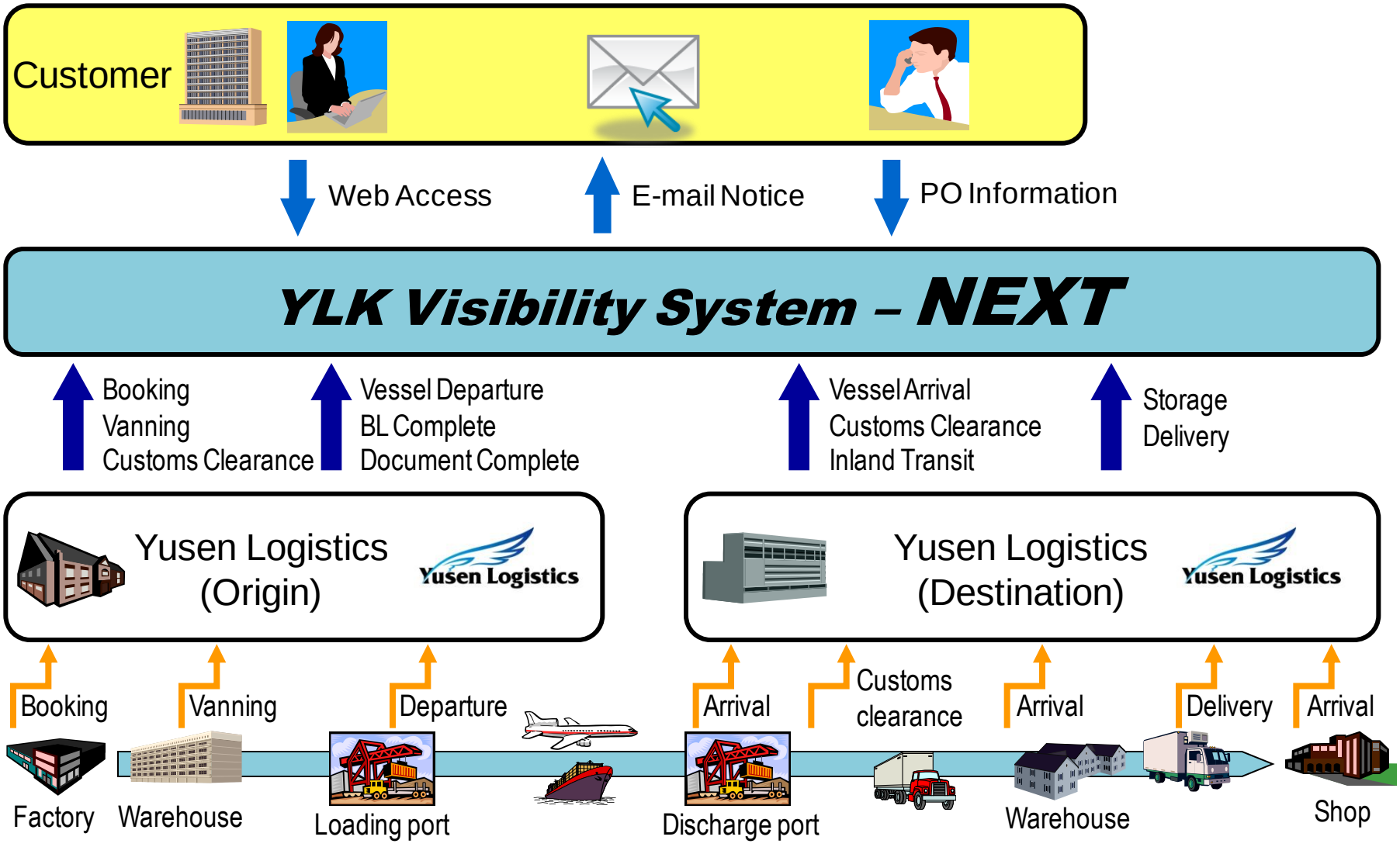
End to End
from receipt place to delivery place

Global
Multiple transport routes, multiple warehouses

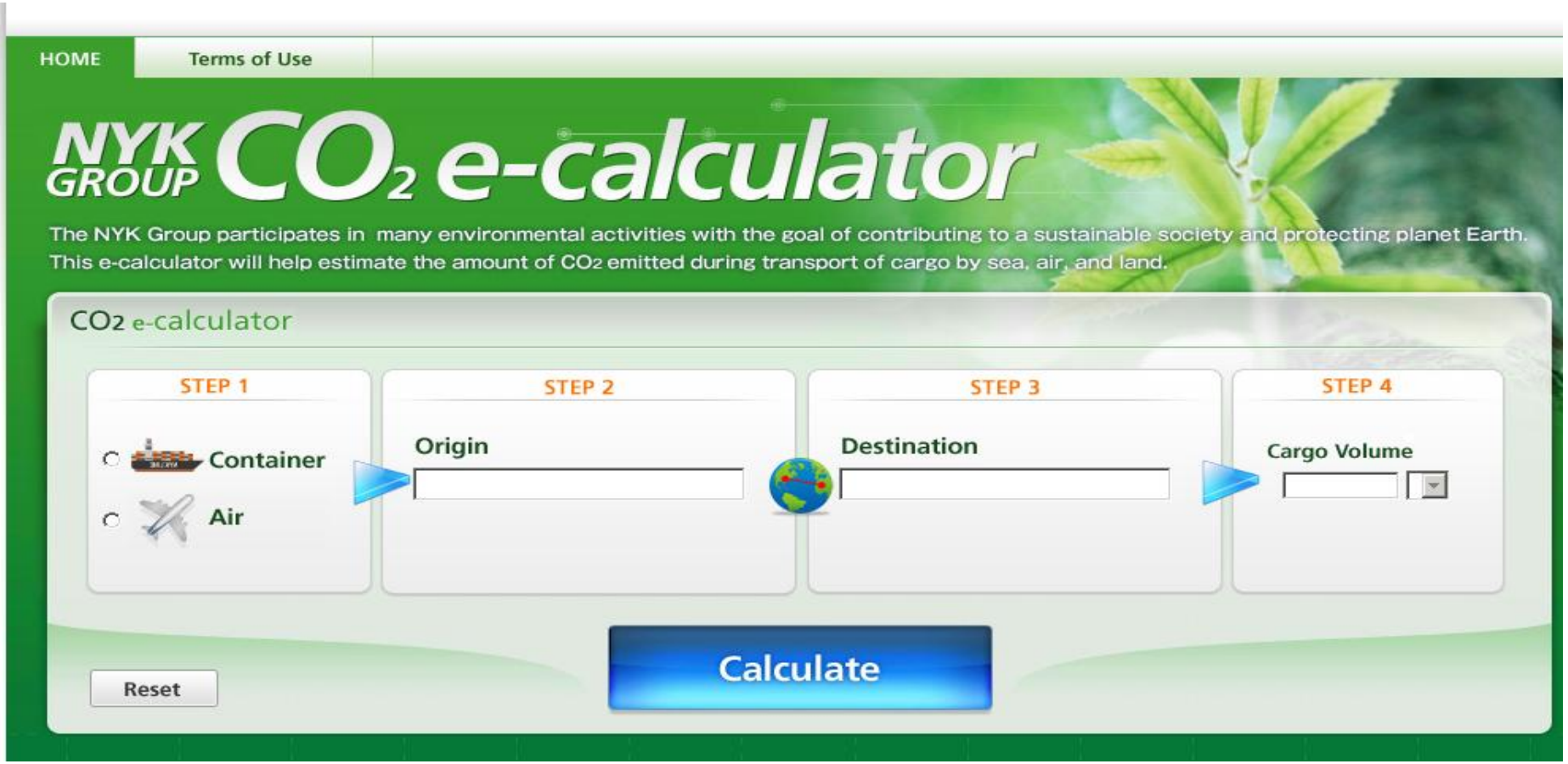
Integrated
Integration of transport, warehouse, PO information

NEXT System Image

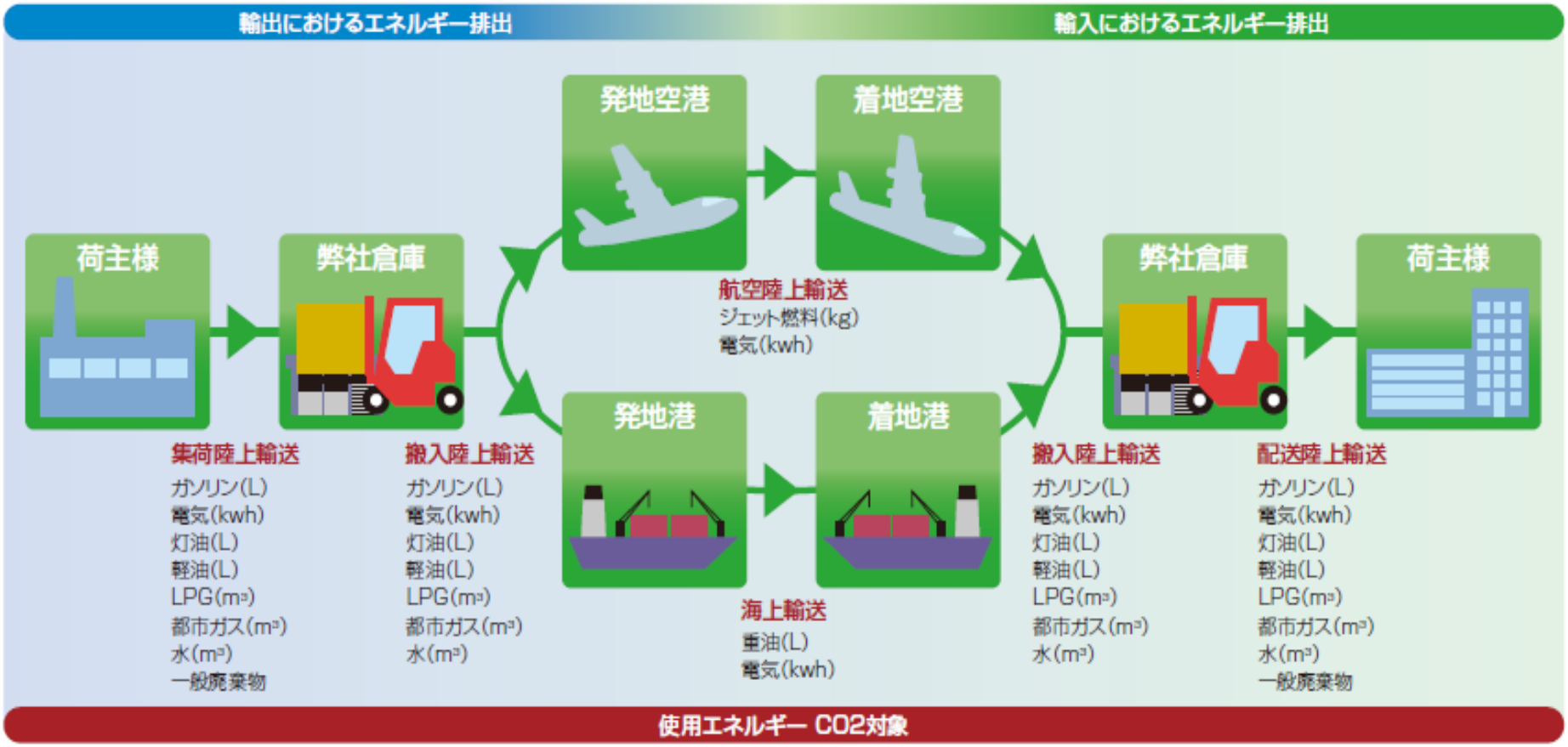
NEXT provides logistics information of the YLK group online.



Actions Toward CO_2 Visibility

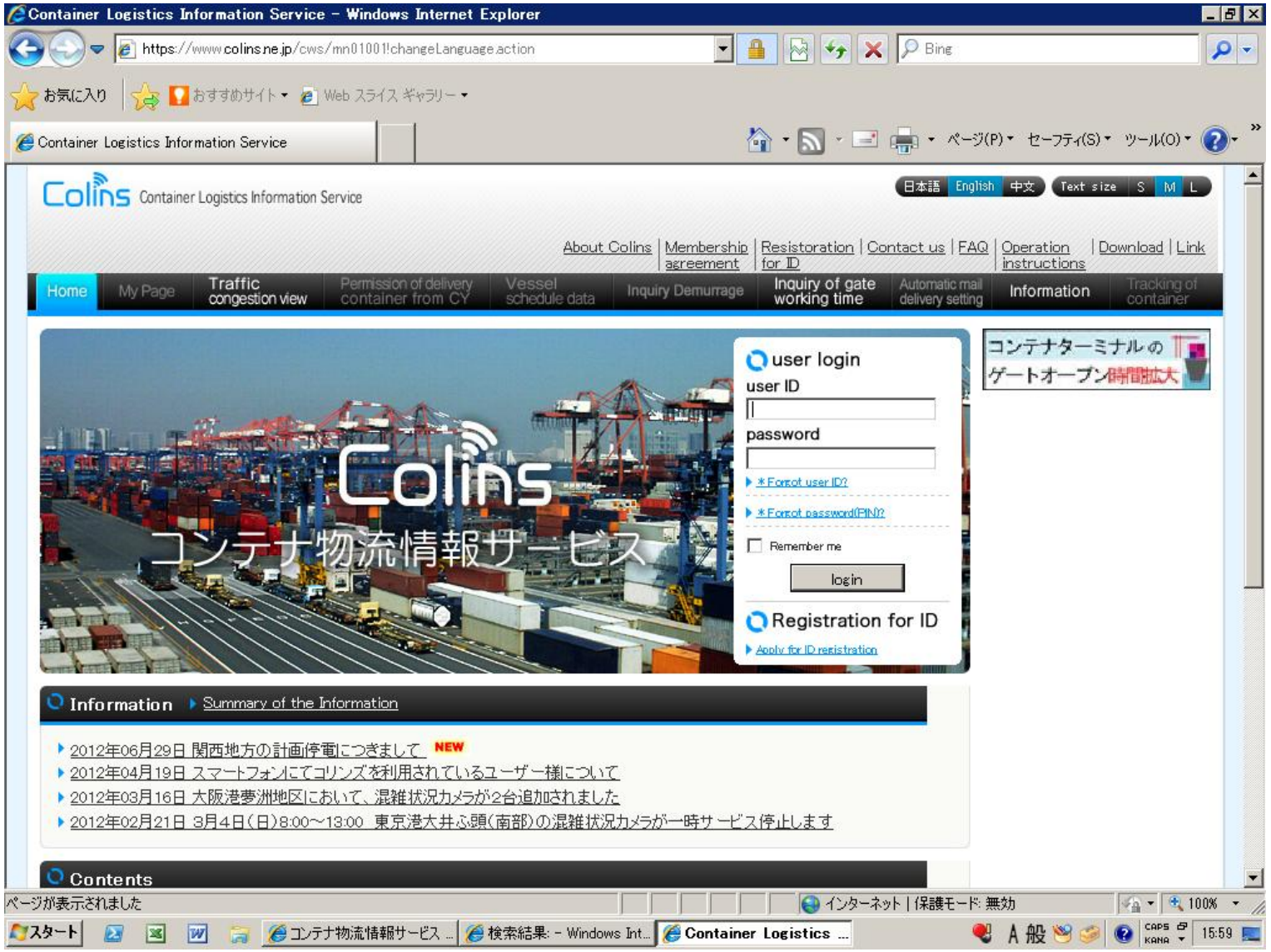


Actions Toward CO_2 Visibility



Colins

Yusen Logistics



Challenges for the Visibility

- Logistics services are complex
- Worldwide standardization and harmonization
- Transparency vs. confidentiality

Logistics Services are Complex



fast-moving



widespread fields





enormous numbers

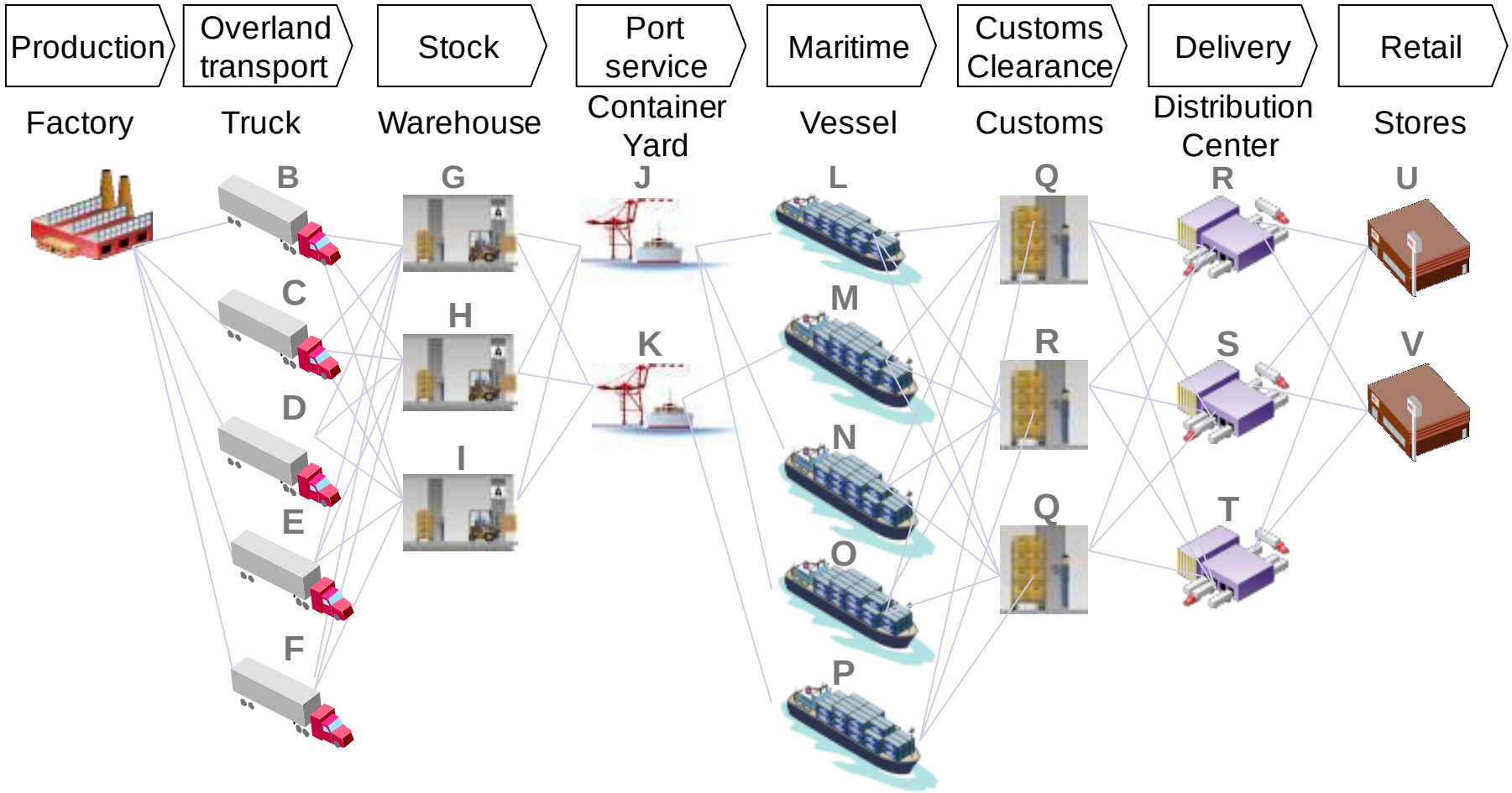


The logistics sectors and its components are extremely fluid and spread out.

Logistics Services are Complex

Yusen Logistics

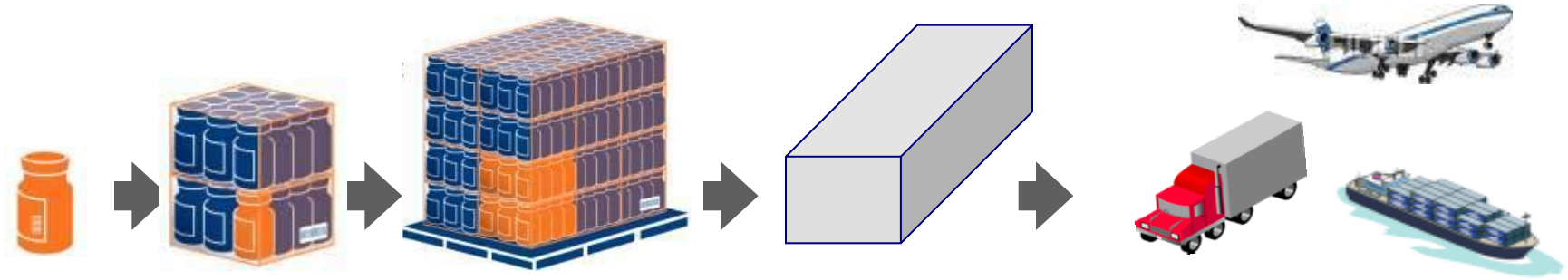
Multiplicity of players

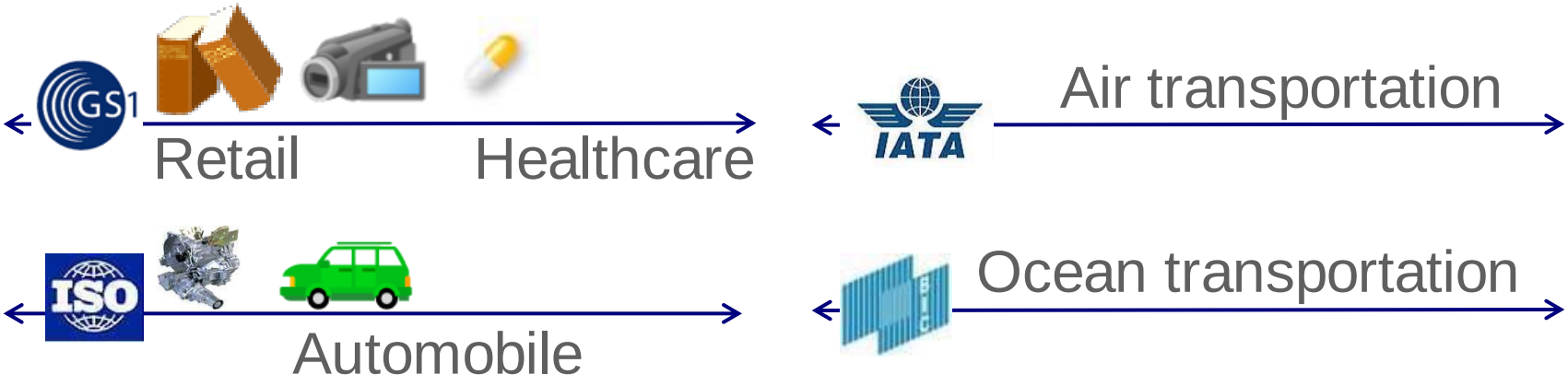


This complexity makes the supply chain difficult to control.

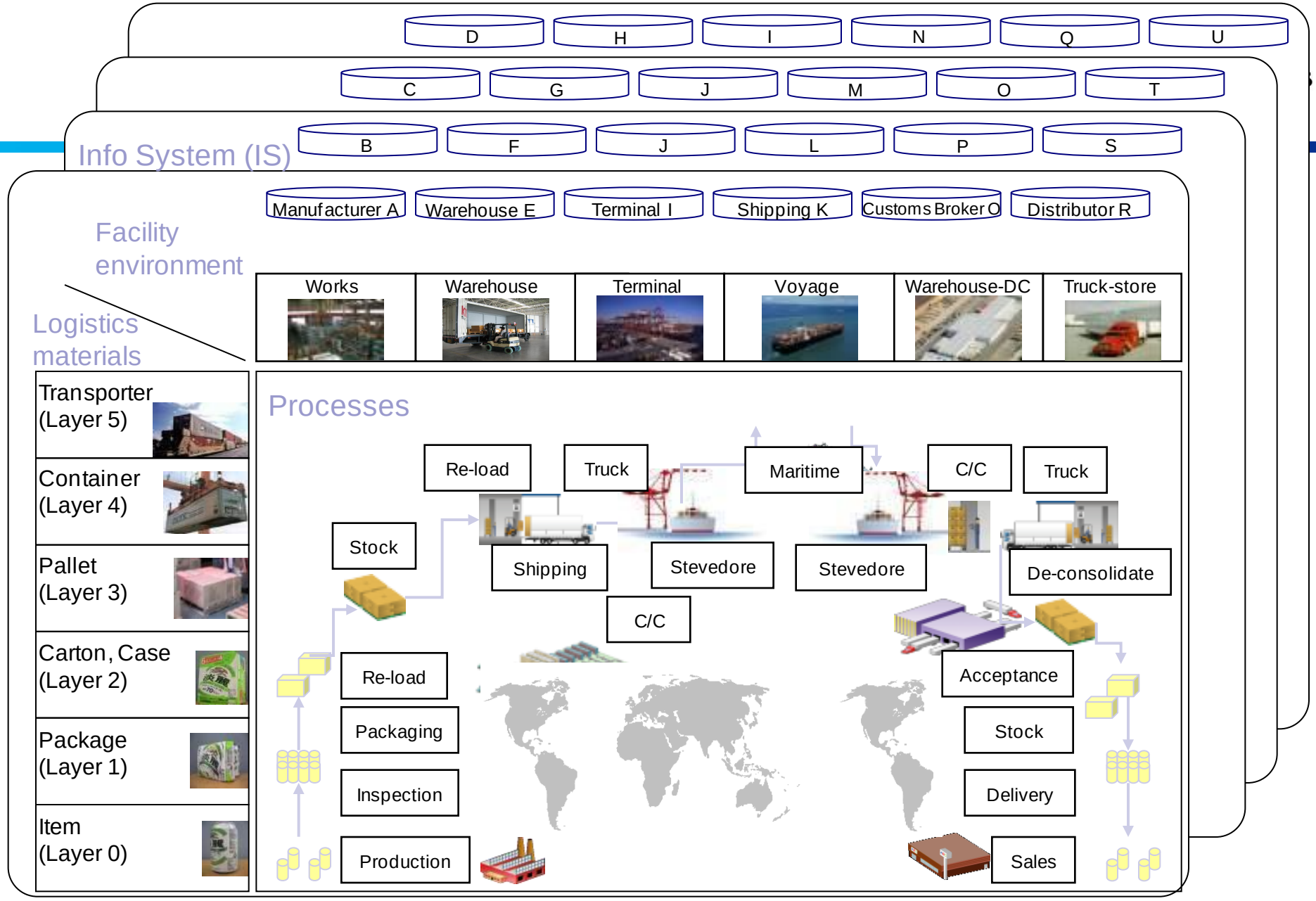
Logistics Services are Complex

Cargo configuration is changing





Item information is not maintained as items move to carton, pallet, and container groupings. Information on those groupings is supported by different standards and organizations.


D
H
I
N
Q
U
C
G
J
M
O
T
B
F
J
L
P
S
Info System (IS)
Manufacturer A
Warehouse E
Terminal I
Shipping K
Customs Broker O
Distributor R
Facility environment
Logistics materials
Works
Warehouse
Terminal
Voyage
Warehouse-DC
Truck-store
Transporter (Layer 5)
Container (Layer 4)
Pallet (Layer 3)
Carton, Case (Layer 2)
Package (Layer 1)
Item (Layer 0)
Processes
Re-load
Truck
Maritime
C/C
Truck
Stock
Shipping
Stevedore
Stevedore
De-consolidate
C/C
Re-load
Packaging
Inspection
Production
Acceptance
Stock
Delivery
Sales

Conclusion

- Visibility of logistics information is essential for development of world trade and economy.
- Standardization and commonality as much as possible are desirable.
- This necessitates cooperation and collaboration among firms and countries.

Yusen Logistics

Thank you very much

Yusen Logistics Co., Ltd.

Logistics Security Plan through Informationization and Standardization

16. July. 2012

Suh, Jungho

CEO, KL-Net. Corp.

CONTENTS

- Background & History
- The Needs of Logistics Security in Korea
- Current Status of Logistics Security System in Kor
- Now, Planning for Security in Korea
- Informationization and Standard
- Future Goal

Background & History



September 11, 2001 attacks

C-TPAT by U.S. CBP in Nov. 2001

ISPS Code was agreed at a meeting of the 108 signatories to the SOLAS convention in London in Dec. 2002

24-Hour Rule by CBP in Dec. 2002

ISPS Code come into force in July 2004



WCO adopted the SAFE Framework of Standards in June 2005

WCO adopted AEO as part of the Framework of Standards in June 2006

ISO has published ISO 28000:2007 as the baseline to the AEO requirements

The 9/11 Commission Act of 2007 requires foreign seaports to scan 100 percent of the cargo entering the US by 2014



Why needs Security at Logistics in Korea ?

More than 99% of trading done by Sea-ports!

Ports are one of the key global logistics infrastructures, handling 99.8% of import/export cargo in Korea where the dependency on trade is very high (80% of GDP)

Trading Port (31 ports)

Construction & Operation : Central Government (MLTM)

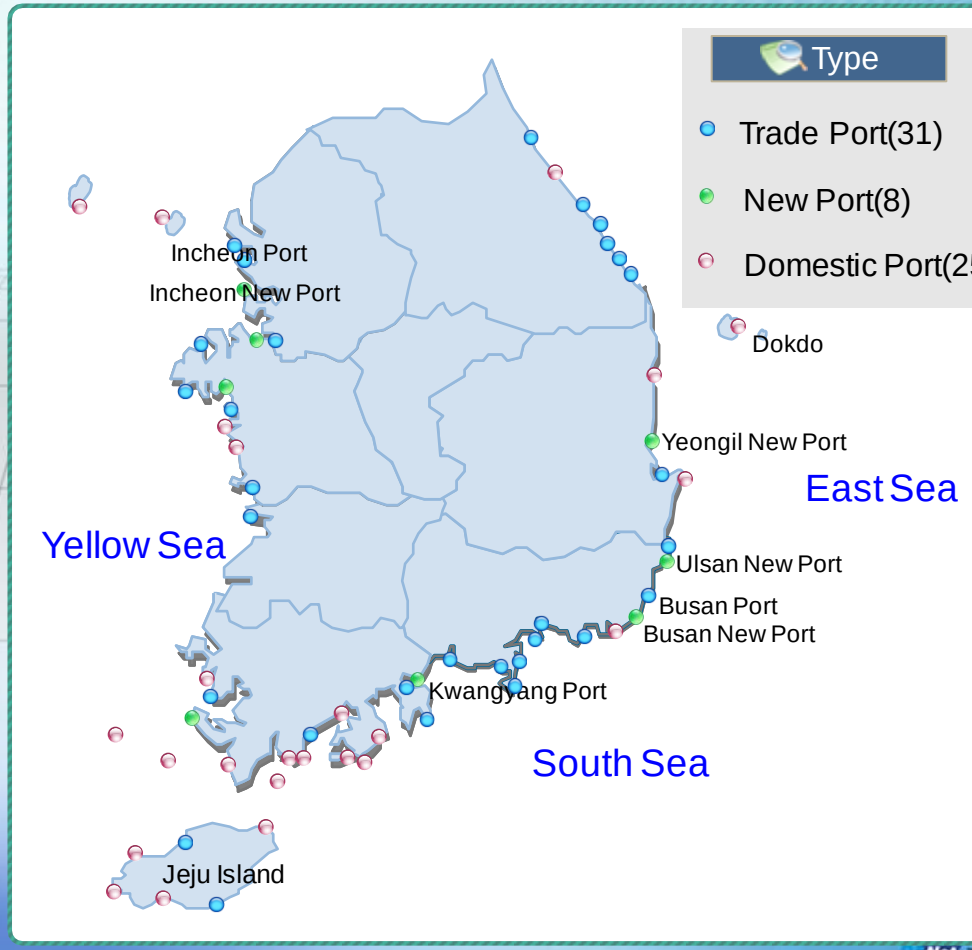
Handling international trade with overseas vessel and close relationship with national economy and public interest

Domestic Port (25 ports)

Construction : Central Government(MLTM)

Operation : Local Government(City or Province)

Handling domestic trade with coastal vessel



Current status of Security in Korea

- Legal Systems
  - Integrated Defense Act of 1997
  - Act for the Security and Safety of Airports of 2002
  - Act for National Logistics Policy of 2008
  - Act for the Security of International Ships and Port Facilities of 2008

- Logistics Systems
  - Implement a pilot project to inspect 100% of containers
  - Introduce “Known Shipper Certification” in aviation sector
  - Introduce security system for inland transportation sector
  - Organize and Operate the Security Committee
  - National/Regional Ports Security Program
  - AEO(Authorized Economic Operator)

Current status of Security in Korea

- In a case of port
  - Disposition of 2,383 security guards for 31 international trading ports
  - All kinds of physical security equipments and facilities



Now, Planning for Security in Korea

Ubiquitous Logistics Security System

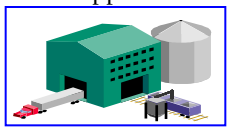
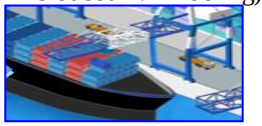
Seamless Logistics

Integrated SCM

Guarantee the Logistics Security

Infrastructure | **Connections**

ULSS
(Ubiquitous Logistics Security System)

Shippers	Transport Information	Location Information	Improve Productivity (No Stop at gate)	Improve Productivity (RTLS based Y/T Pooling)	Location Information for ships
					
Shippers	Transport Information	Logistics Node	Terminal (Gate)	Terminal (Yard)	Ships

Shippers & Forwarder

- Cargo Tracking
- Asset Management
- Efficient of Mgmt. Warehouses
- Efficient of Customs
- Information of Dangerous Cargo

Trucking Companies

- Truck Tracking
- Asset Management
- Information of Dangerous Cargo
- Information Container Truck

Shipping Companies

- Container Tracking
- Asset Management
- Efficient of Mgmt. Container
- Efficient of Customs
- Information of Dangerous Cargo

Customs

- Integrated Paper Work
- Efficient of any inspection
- Usage of Information between public and private

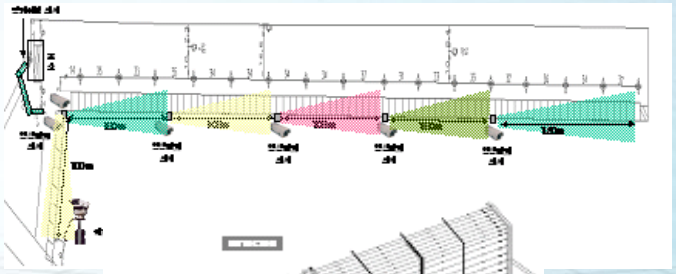
Terminal

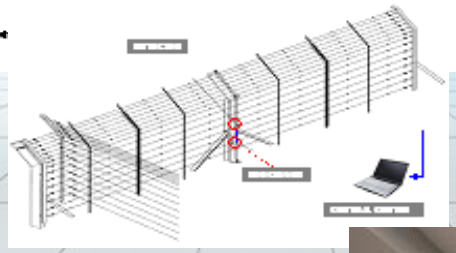
- Automation of port operations
- Security service for container
- Confirmations of container
- Efficient of Yard operations
- Information of dangerous cargo

Now, Planning for Security in Korea

- Integrated Surveillance System

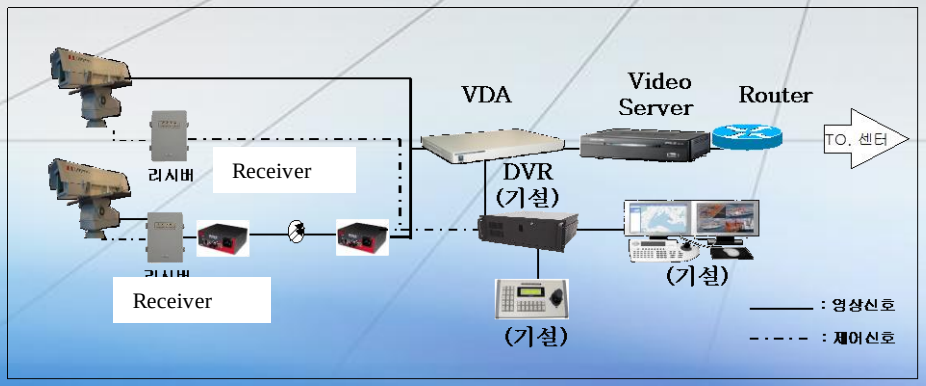












Now, Planning for Security in Korea

- Identification System
  - Pilot project of "RFID Tag embedded Identification Card" since 2008
  - Automatic identification of personnel and vehicle to access
  - Effective Access Control to port facilities
  - Unified type and Usable for all port by sharing identification data
  - Planned $21.2m as budget for installation for all the ports of Korea





Identification card embedded RFID Tag

Now, Planning for Security in Korea

- Identification System



Optical Characterization Readers
(identification of car license plates)



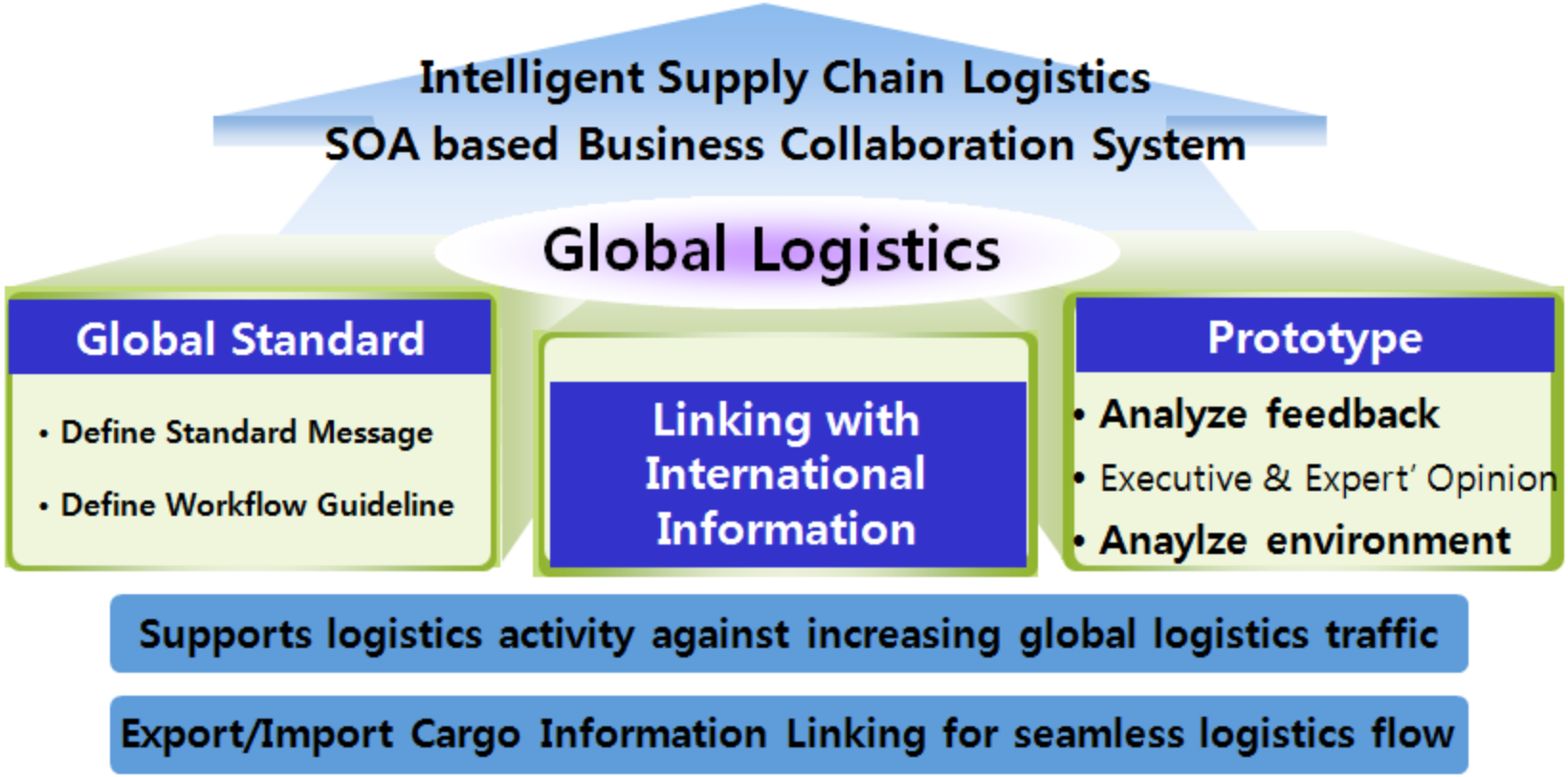
RFID Tag Readers for Pedestrian



RFID Readers for cars

Informationization viewpoint for Security

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



Standard viewpoint in Korea

◎ 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

Future Goal : 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

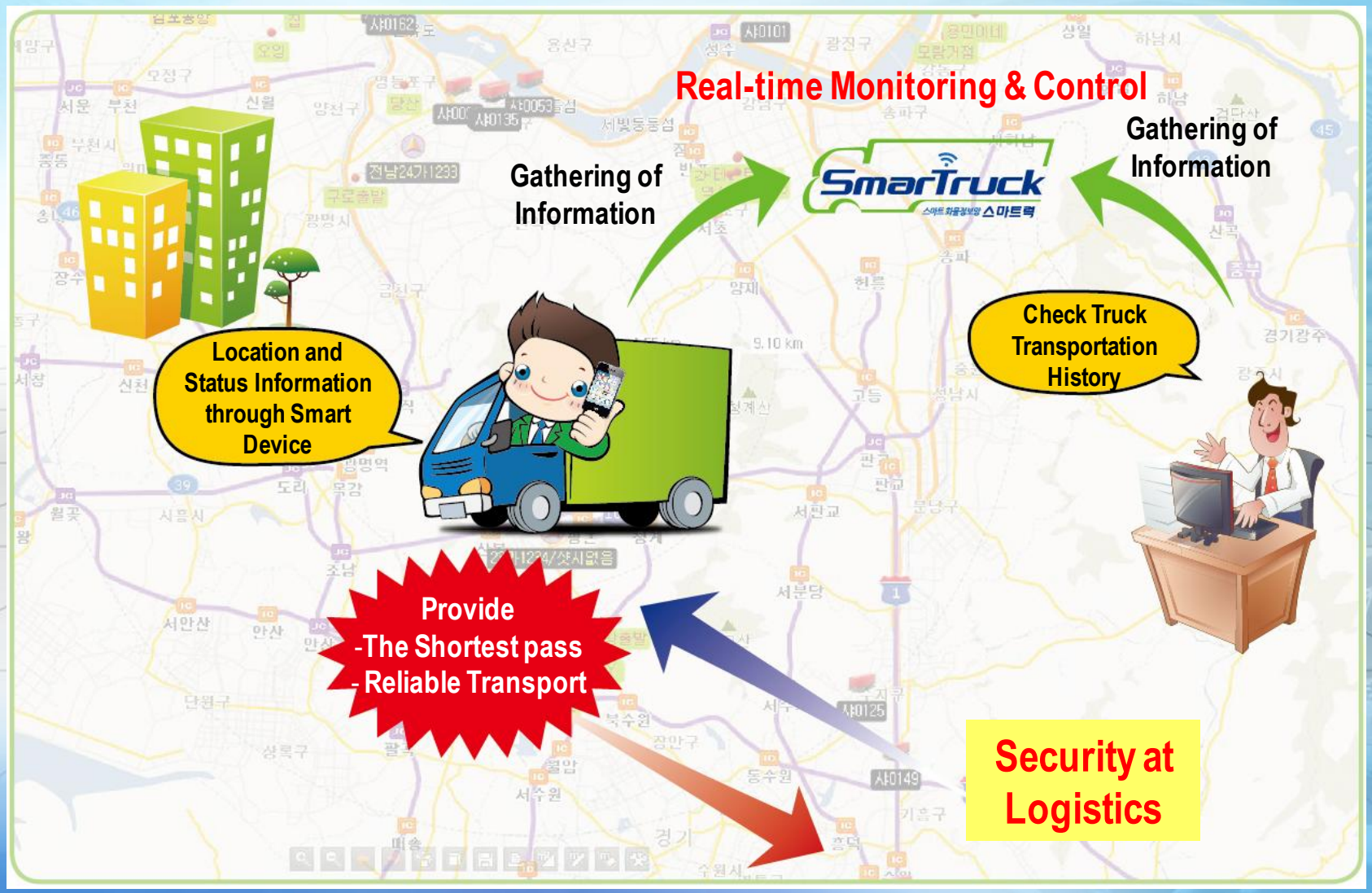
- No supports to hold information in common
- Non-standard data
- No existing of information link and utilization method

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

Future Goal : Mobile Logistics



감사합니다 !!!

谢谢！

ありがとうございます

Establishing environment friendly logistics
CJK Eco-Shipping Project

July 16, 2012

Takaichi Someya

National Maritime Research Institute of Japan

Background - 1

- Dynamic development of Asian Economy
  - **Northeast Asian Region has already grown as one of the largest economic regions in the world**
  - **Still continues to grow with development of Southeast Asian Region**

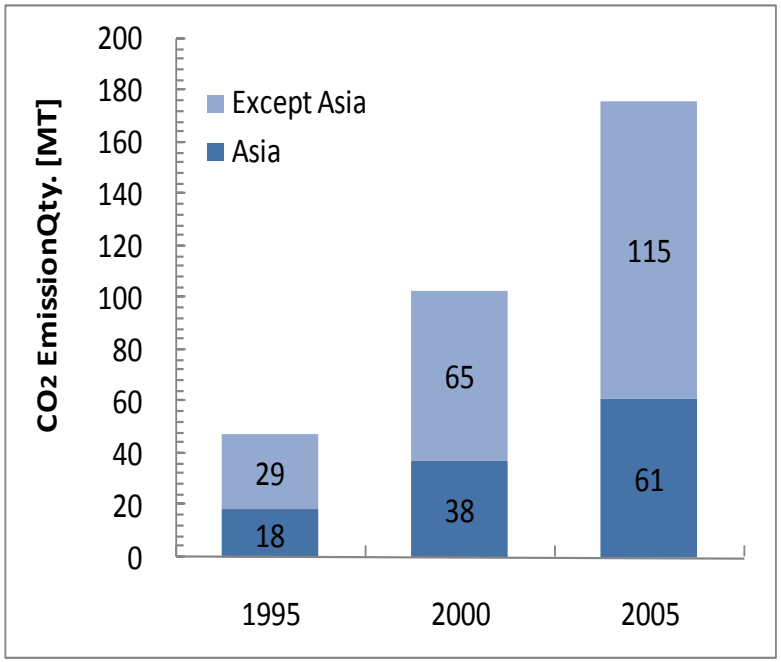
Increasing CO2 Emission

- It's an urgent issue to create effective logistics network in the Asian Region
  - **Maritime transportation is the prime means of logistics.**
  - **Maritime transportation is high in energy efficiency.**

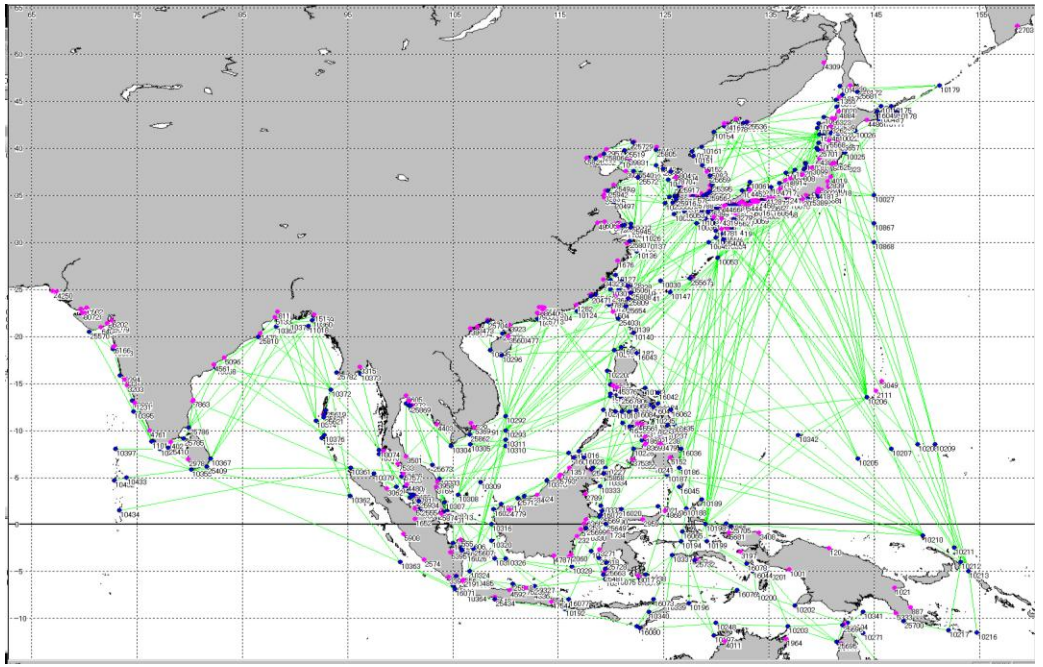
Logistics network based onmaritime transportation

Background - 1 Fact & Figures

- Amount of CO2 emission is increasing at a rapid rate.
- Maritime transportation is the prime means of logistics.



Analyzed by NMRI from Ship movement data of Fair-play, 2005



Shipping route in Asia

Background - 2

- The world's trend on maritime transportation

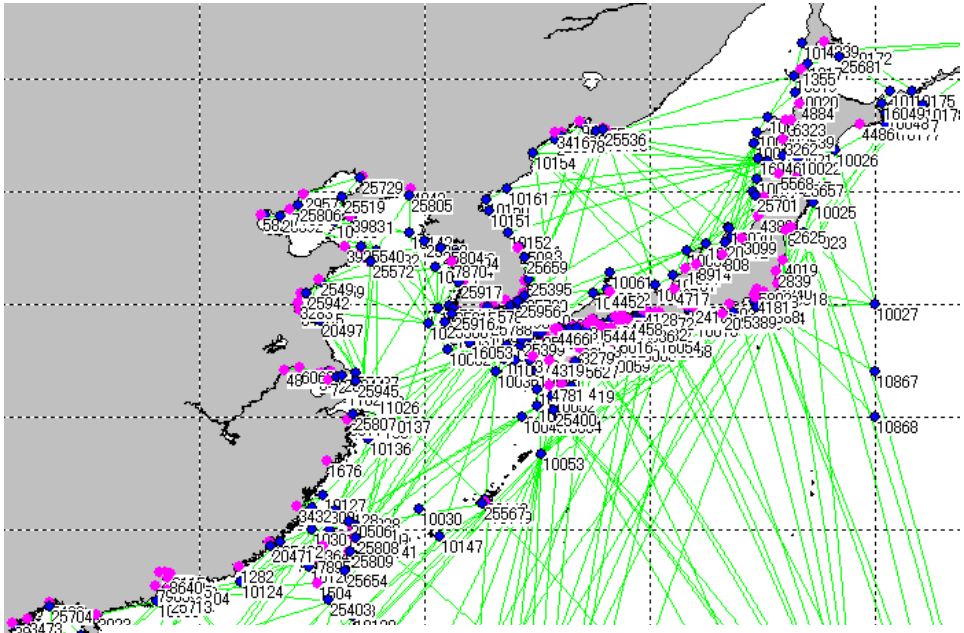
IMO MEPC adopted guidelines: Mandatory Regulations on Energy Efficiency for international ships

- **Regulation for ships: EEDI (hardware-side)**
- **Guidelines for ship's managements: SEEMP (software-side)**

enter into force on 1 January 2013

Ship's managements are applicable for existing ships.
Ex. : Ship's speed reduction, Load factor improvement

Background - 3 Northeast Asia



Shipping route in Northeast Asia

Example of Ports Distances Unit: mile

	Fukuoka	Kobe	Tokyo
Busan	115	363	674
Shanghai	502	787	1,049
HongKong	1,141	1,387	1,612
L.A.	5,229	5,125	4,854
Rotterdam	10,827	11,120	11,344

- Short Port Distance
  - ➡ Reduction of waiting time directly causes effects in reducing ship's speed.
- Short-term changes in weather and wave conditions
  - ➡ For On-time shipping, Navigation support based on weather forecast is essential.

⬇

Management of individual ships ➡ and fleets ➡ and cooperating with ports.
And future・・・

Ship's Managements for Efficiency Improvement

- Individual Shipping Management : Just-In-Time Operation
  - ⇒ Reduce waiting time
    - ⇒ Achieving speed reduction of ships
- Fleet Management : Fleet Scheduling Optimization
  - ⇒ Reduce empty load voyages
    - ⇒ Load factor improvement
- Collaborate with ports : Real "Just-In-Time"
  - ⇒ Reduce waiting time of both ships and trucks
    - ⇒ Total improvement of land and sea Transportation
- And the future : ・・・・・

Individual Shipping Management : Example of Verification in Japan

Just-In-Time operation ⇒ Ship Speed reduction

10% reduction of speed → 20% of energy-saving

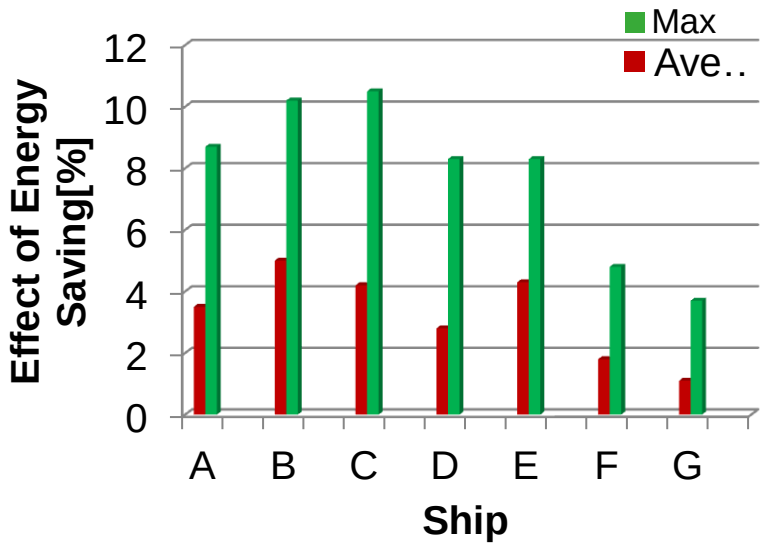
⇒ Big energy-savings

Adopting Weather Routing ⇒ Ensure on-time and stable transportation

Verification example in Japan : Ave.3～5% energy-saving

（by only route optimization）

Ship	Ship category	Num. of Nav.
A	Cement 14000G/T	33
B	Cement 15000G/T	33
C	Cargo 15000G/T	24
D	Steel cargo 499G/T	8
E	RORO 7300G/T	43
F	Ferry 11000G/T	34
G	RORO 16000G/T Ocean going	52



Individual Shipping Management : Securing of On-time Shipping

This system provides the most suitable route and ship's speed to balance reduction of CO2 emission and punctuality generated from weather, wave conditions, etc.

R&D in Guidance sponsored by NEDO（2006-2010） NMRI・JWA・TUMSAT・RTRI・JILS

Shipper's Order 'Don't be Late'

- Keep schedule
- Responsible on delay

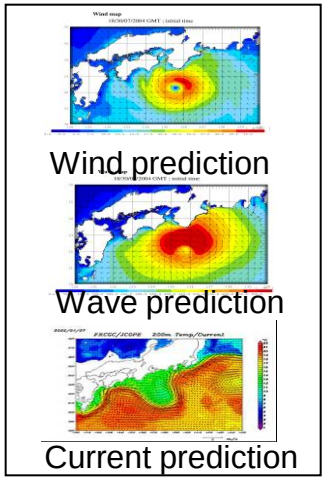
Uncertainty of Weather/Current

Navigation
Speed：Nav. speed (Fixed)
Route：Shortest pass (Fixed)

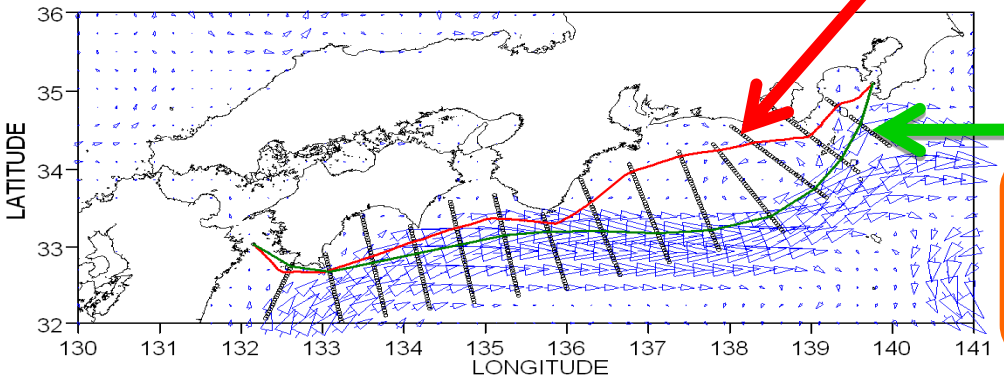
Waiting Loss Time for Loading at port



Weather Forecast



Optimal Navigation Plan



- **Optimal Route**
- **Optimal Speed**

On-time navigation
Keep schedule
Save energy

Fleet Management

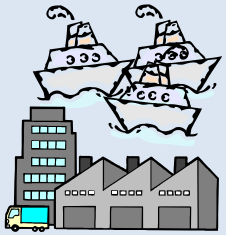
Fleet-level Scheduling/Optimization

⇒ Load Factor Improvement / Fleet Size Reduction

Transportation Orders

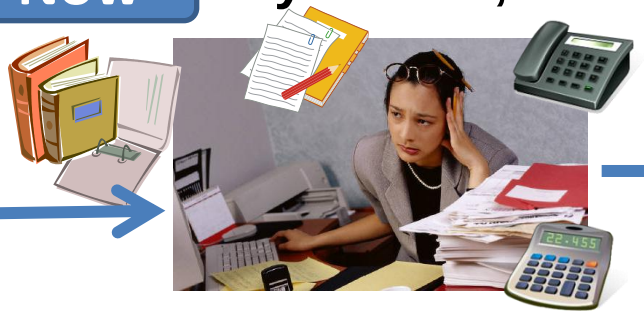
No.	Load	day	Discharge	day	amt
1	Tokyo	1	Nagoya	2	72
2	Yokohama	1	Osaka	3	501
3	Hokkaido	1	Tokyo	3	703
4	Hakata	1	Hiroshima	4	1005
.	.	.	.	.	.
.	.	.	.	.	.

Information of vessels/ports

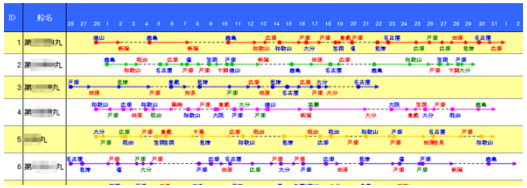




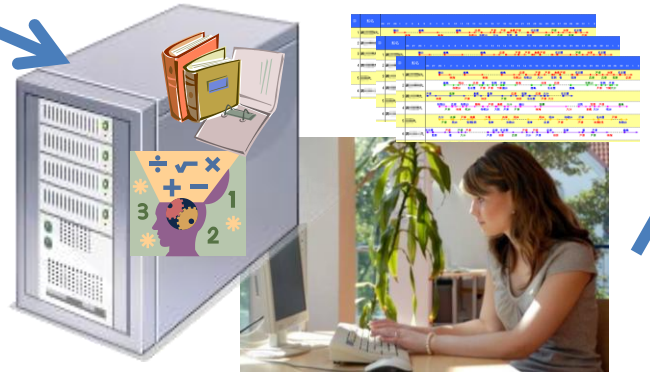
Now By human, Whole day



Schedule



Future NMRI Fleet Scheduling System



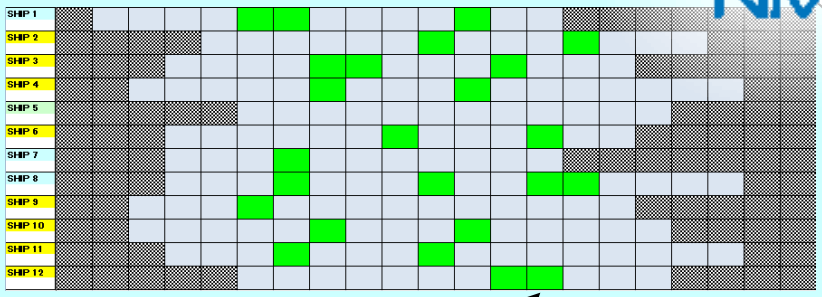
- Input orders
- Apply constraints
- Enumerate possible patterns
- Choose the optimal schedule

Computer-aided fleet scheduling

Fleet Management : Example of Verification in Japan

Human-Intensive Scheduling:

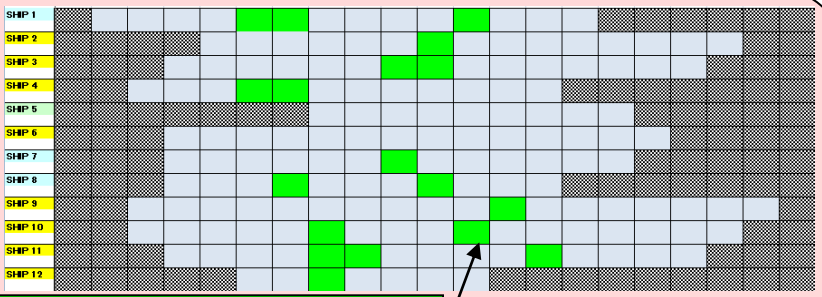
Total navigation 166 days
(including 24 days in ballast)



24days in ballast

Optimization calculation

Total navigation 160 days
(including 18 days in ballast)
Total distance:6% reduced
(Saving energy as well)



18days in ballast

If 6 days reduction devoted to ship speed reduction, additional 7% saving energy will be achieved.

Collaborate with Port : Total Improvement of Land and Sea Transportation









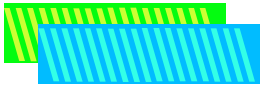
Public quay
Advance reservation

On-time port call
without waiting time

Smooth cargo handling







Smooth Port call & Cargo handling
Optimal Speed, Energy Saving

Seamless Logistics
Eco-friendly Logistics

In the future, Door-to-door Logistics will be more efficient



logistics manager
managing throughout entire transport

land transporter



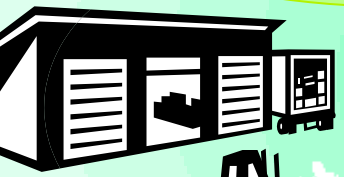
sea transporter



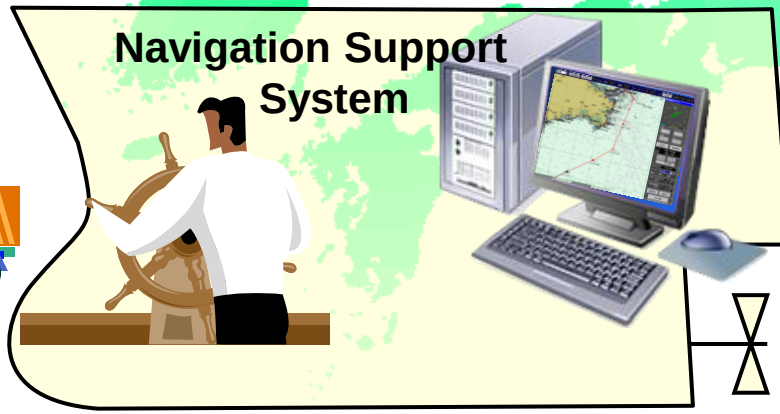
land transporter



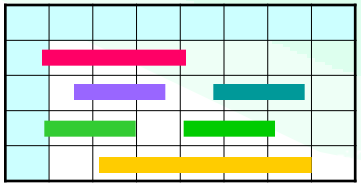
arrival → land transport → unload → sea transport → load → land transport → departure











Efficient
Fleet Scheduling



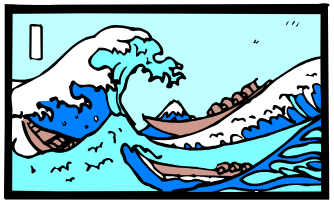
Time-Strict



Fit for SCM



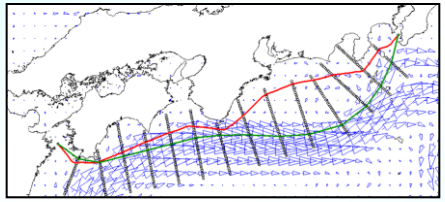
Energy-Saving



Safety
Navigation

Joint Research Project Proposal : Eco-Shipping

Individual Ship Management

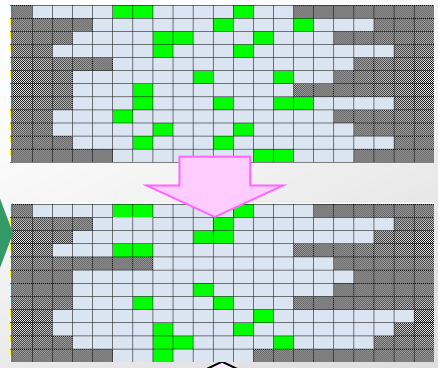


This Project:
On-time Navigation

Need Navigation Support System
（Weather Routing）

On-time Port Call by Optimal Speed Planning

Fleet Management



Accomplish CO2 reduction in East Asia



Navigation Support System proven in Japan will be provided

Port operator's cooperation is needed.

Fleet Scheduling System proven in Japan will be provided

Participating Ship Companies for this Project:

Shanghai Super Express

SITC

To Be Determined

Joint Research Project Proposal

Japan will support

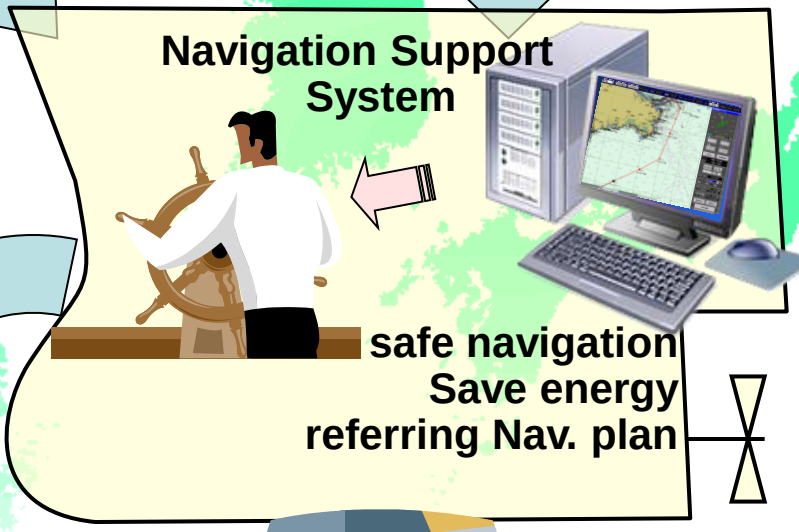
National Maritime Research Institute, Japan

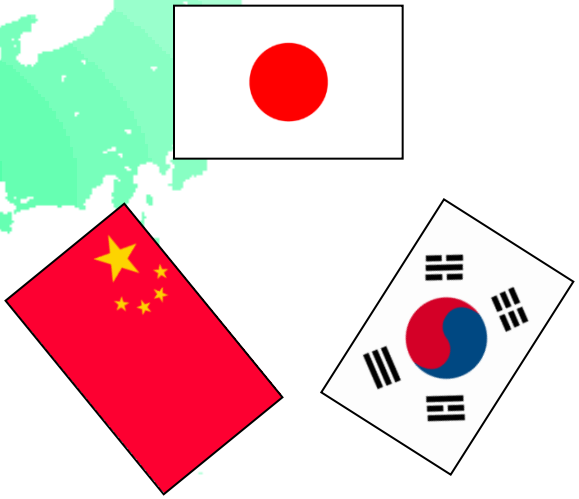
Shipping company

Information Service of weather forecasts and optimal nav. plans

Execution of experiments

Support and cooperation for the experiments



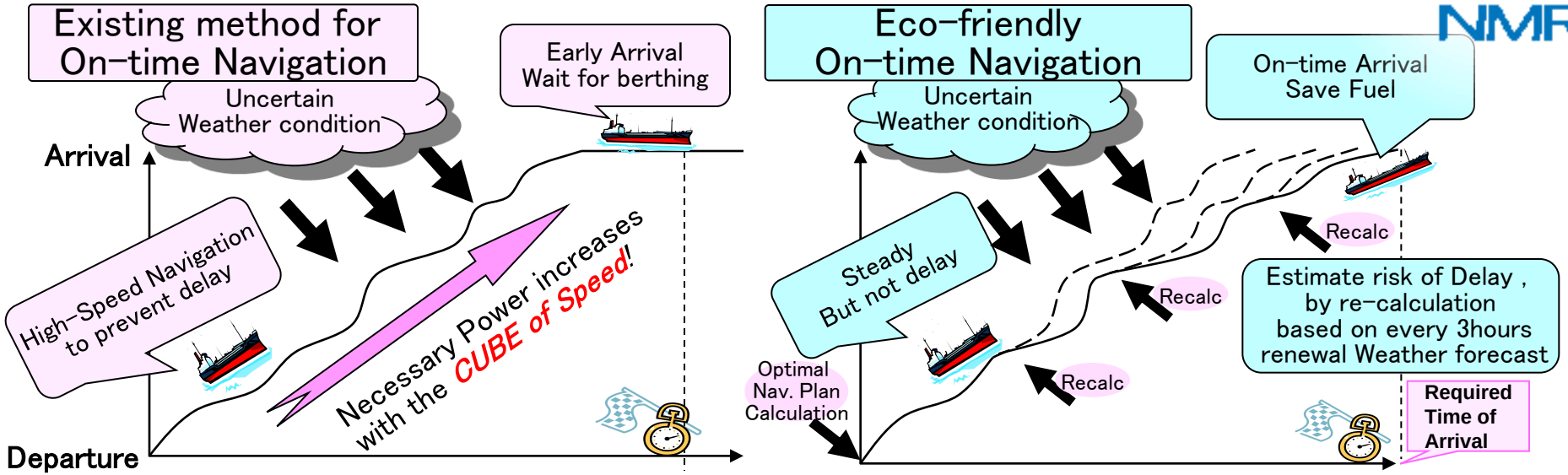


Navigation monitoring data

Effect evaluation by expert meetings

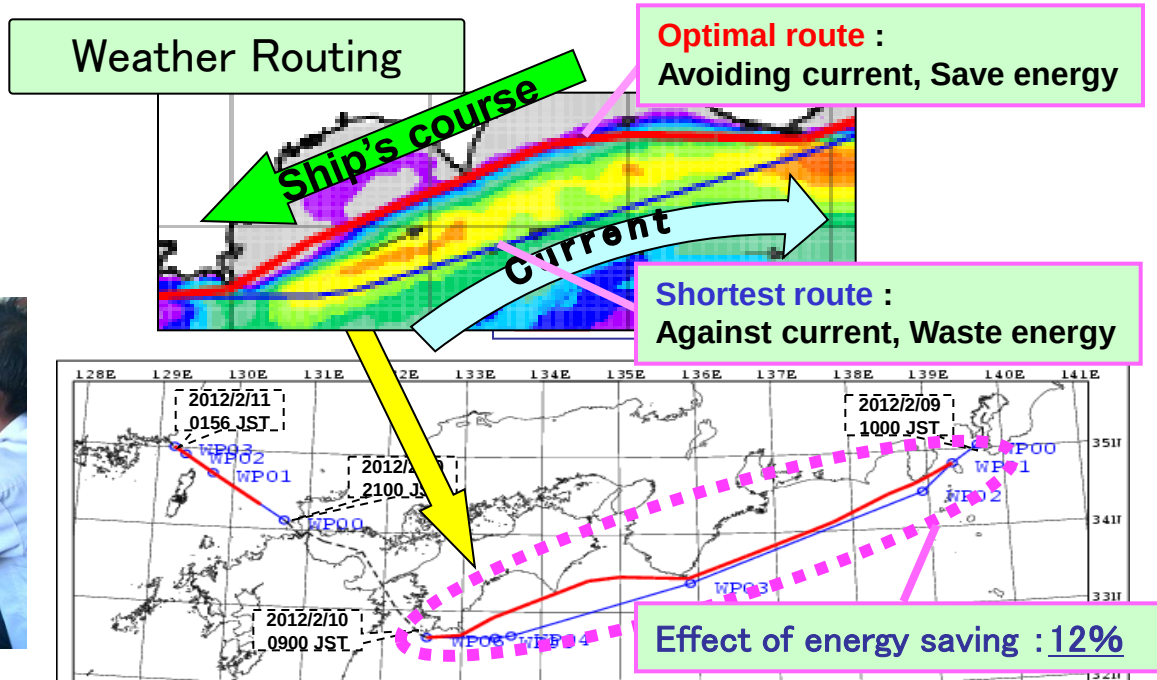
Effects of energy-saving and on-time navigation

Joint Research Project Proposal : Eco-Shipping









The Counterstrategy for Realizing Low-Carbon Green Logistics

China-Japan-Korea International
Conference on Logistics

July 16, 2012

Hanjin Co., LTD.

Logistics Business Headquarter
Executive Vice-President

Jung Suk, Choi

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      Echo Driving
  - Stevedoring
    - Use Alternative Fuels for Equipment
  - Shipping
    - Modal Shift
      Expand Coastal Transportation
  - IT
    - e-Trucking System

'A Proposal for Green Logistics Cooperation Between Countries'



I. Current Green Growth and Green Logistics Initiatives

The Need for Green Logistics

Evidence of Global Warming

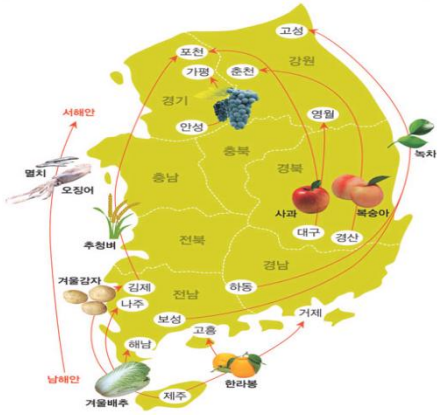
- Malaria spreads to highlands of the Andes Mountain Range, 7000ft above sea level
- 10~15% reduction in North Pole glaciers compared to 1950s, average 17cm rise in sea level
- 279 animal and plant species move nearer to North and South Poles in response to global warming

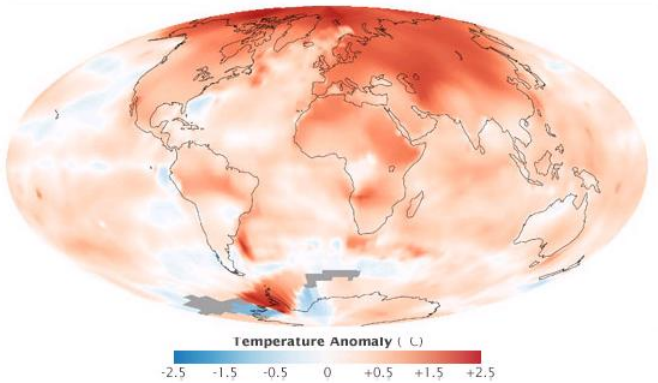


The Future with Global Warming

- Increased deaths due to dangerous heat waves from rising temperatures
- North Pole glaciers disappear from the 2050s
- Over 1 million animal and plant species are extinct by the 2060s







I. Current Green Growth and Green Logistics Initiatives

Global Cooperation Initiatives to Respond to Climate Change

International Environmental Agreements to Prevent Global Warming

- **1992. 6** ■ Adoption of United Nations Framework Convention on Climate Change at Rio in 1992
  – Non-binding Environmental Agreement
- **1995.3** ■ 1st Conference of the Parties(COP) – Establishment of Negotiation Group for Greenhouse Gas Reduction
- **1997. 12** ■ 3rd COP – Adoption of Kyoto Protocol
- **2005. 2** ■ Kyoto Protocol Comes into Effect – Annex I Binding Reductions by Countries
- **2007. 11** ■ G8, World Economic Forum – 4th IPCC Report Released
- **2007. 12** ■ 13th COP(Bali)
  – Adoption of Bali Roadmap
- **2009. 12** ■ 15th COP(Cophenhagen)
  – Formation of Partnership to Counter Climate Change
- **2010. 11** ■ 16th COP(Cancun)
  –Agreement on the Principle that Industrialized Nations Must Reduce Emmissions

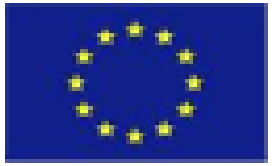
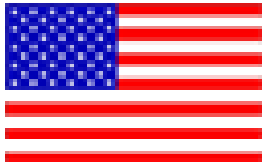
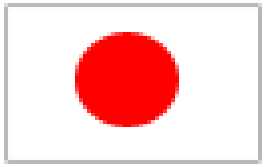
Key South Korean Policies to Counter Climate Change

- **2008. 08** ■ Declare Low-Carbon Green Growth as National Future Vision
  - 4% Reduction by 2020 versus 2005 (30% versus BAU)
- **2009. 06** ■ Enact Law for Sustainable Development of Transportation and Logistics
- **2009. 10** ■ Amended Framework Act on Logistics Policies – Induce Change to Voluntary Green Logistics
- **2009. 12** ■ Framework Act on Low-Carbon Green Growth Passes National Assembly(In Force Since 4/4/2014)
- **2011. 02** ■ Delayed Emission Trading System (3/1/2013 → 1/2015)
- **2011. 07** ■ Release Roadmap for the Realization of a Low-Carbon Green Society by 2020

- Finalize Emissions Reduction Targets by Sector and Industry
- Logistics : 34.3% Reduction versus BAU by 2020

I. Current Green Growth and Green Logistics Initiatives

Climate Change Agreements and Emissions Reduction Activities of Key Countries

Country	Key Activities
	▪ 20% Reduction Versus 1990 by 2020 ▪ EU Climate Change Directives Comes Into Effect(April 2009) ▪ Introduction and Implementation of EU Emissions Trading Scheme(EU-ETS)(2005) ▪ Introduction of Regulations on Vehicle Emissions(2009)
	▪ First Country to Introduce Climate Change Legislation Stating Reduction Targets(December 2008) ▪ Reduction Target : 34% Versus 1990 by 2020(2009)
	▪ Plans to Invest $150 billion over 10 years on New Renewable Energy Industry(January 2009) ▪ American Clean Energy and Security Act, with 17% Reduction Versus 2005 by 2020, Passes House of Representatitves
	▪ Released「Cool Earth 50」to Create a Low-Carbon Society ▪ J Recovery Plan, including a Revolutionary Low-Carbon Strategy(April 2009) ▪ 15% Reduction Versus 2005 by 2020(June 2009)

I. Current Green Growth and Green Logistics Initiatives

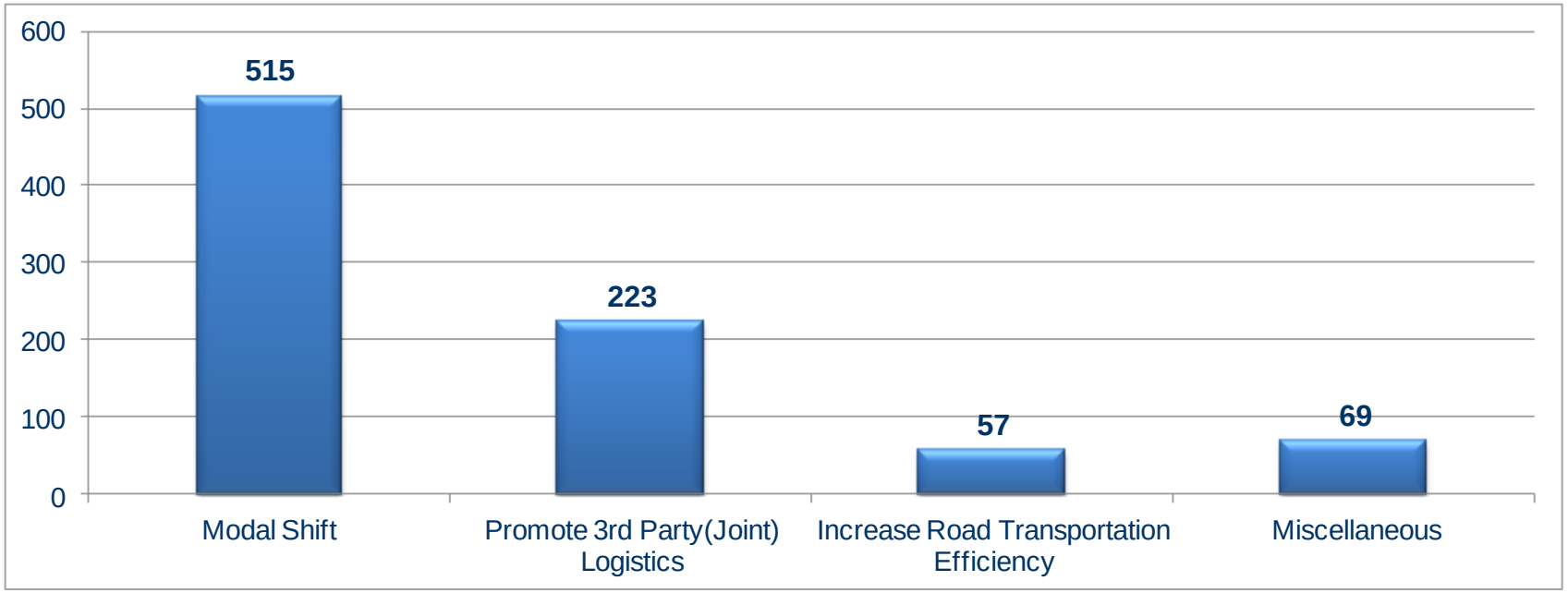
South Korea's Low-Carbon Green Growth Initiatives

Green Growth Committee Sets National Emissions Reduction Goals(November 2009)

- 30% Reduction Versus 2005 BAU(2,440 Million Tons of Carbon Dioxide) by 2020

Ministry of Land, Transport and Maritime Affairs Sets Reduction Goal for Logistics at 86 Million Tons by 2020

[Unit : 10,000 Tons]



I. Current Green Growth and Green Logistics Initiatives

South Korea's Low-Carbon Green Growth Initiatives

Formation of Consultative Group for Green Logistics(June 2010)

- Joint Participation by Industry/Government/Academia
- Discuss Certification Standards for Green Logistics Company Label and Plans for Designating Green Logistics Projects

Logistics Energy Goal Management System(September 2010)

- Increase Participating Firms from 11 in 2010 to 17 in 2011, 22 in 2012 and All Subject Firms by 2020
- Evaluate Emissions Reduction Goals, Methods and Accomplishments Submitted by Participating Firms

Certification System for Green Logistics Companies(December 2010)

- Initiative Linked with Logistics Energy Goal Management System
- Conducted Pre-Certification and Evaluation(June 2011)

Test for Energy Use Report System(July 2011)

- Motor Truck Transportation Firm with Yearly Energy Use Over 2000 TOE
- Reports from 25 Out of 109 Subject Companies Received

※ TOE (Ton of Oil Equivalent)
- a unit of energy which is converted from caloric value based on all energy sources on the Earth to the caloric value of oil.

I. Current Green Growth and Green Logistics Initiatives

South Korea's Low-Carbon Green Growth Initiatives

Vision : Build Advanced Pro-Environment Logistics System That Drives Low-Carbon Green Growth

(Objective : Reduced Logistics Emissions by 86 million BAU by 2020)

Key Strategies

Policy Target : Centered on Transportation Firms →Expand to Individual Car Owners and Shippers
Project Range : Testing (Selective and Concetrated → Expand to All Logistics Companies)
Method : Government → Centered on Governance(Private-Public Consultative Group)

Key Issues

- Build Green Logistics Infrastructure
- Promote Joint 3rd Party Logistics
- Promot Pro-Environment Transportation Methods and Increase Efficiency of Land Transportation
- Establish Industry/Academic/Research Cooperation System

I. Current Green Growth and Green Logistics Initiatives

Hanjin's Green Logistics

Hajin's Green Logistics Initiatives

Set Green Logistics as a Management Objective	Build Greenhouse Gas Inventory System	Initiative on Business objectives for Green Logistics friendly environment
December 2009	March-December 2010	January 2011 ~ Current
• Set Green Management as a Basic Objective • Create a Task Organization for Green Logistics Initiative • Select Key Initiative Issues	• Set Guidelines for Inventory System • Analyze Business environment and Collect Data • Calculate Emissions and Create Report • Build Gas IT System to gauge Greenhouse Gas	• Monitor Greenhouse Gas Inventory • Introduce Low-Pollution Vehicles/ Equipment/Facilities • Increase Efficiency of Vehicles/Ships/ Equipment/Facilities • Expand and solicify Green Management Base

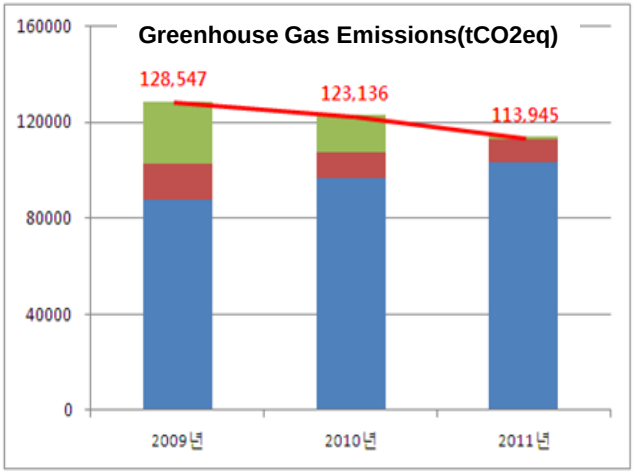
Establish Hanjin Greenhouse Gas Inventory System



I. Current Green Growth and Green Logistics Initiatives

Hanjin's Carbon Emissions Inventory

연도			2009년	2010년	2011년
온실가스 배출량 (tCO2eq)	Scope1	고정	8,988	9,819	10,301
		이동	78,707	86,781	93,007
		공정	128	105	103
		탈루	30	3	2
		소계	**87,853**	**96,708**	**103,413**
	Scope2	전력	14,734	10,667	9,352
		스팀	28	20	18
		소계	**14,762**	**10,687**	**9,370**
	Scope3	이동배출	25,932	15,741	1,162
		소계	**25,932**	**15,741**	**1,162**
총계		배출량 (tCO2eq)	128,547	123,136	113,945



SCOPE 1	**Direct Emissions** •Fixed (Generators, Heater/Cooler, etc.) •Variable(Owned/Leased Vehicles) • Process (Lubricating Oil), Fugitive(Oil Tanks)
SCOPE 2	**Indirect Emissions** •Purchased Energy •Purchased Steam
SCOPE 3	**Miscellaneous** •Variable - Fixed/Variable Leased Vehicles

Hanjin's Determination to Cut Emissions

HANJIN CO.,LTD. ▶ Green Logistics with HANJIN



Agreement Ceremony for Cooperative Project to Reduce Energy Consumption and Emissions(December 2010)

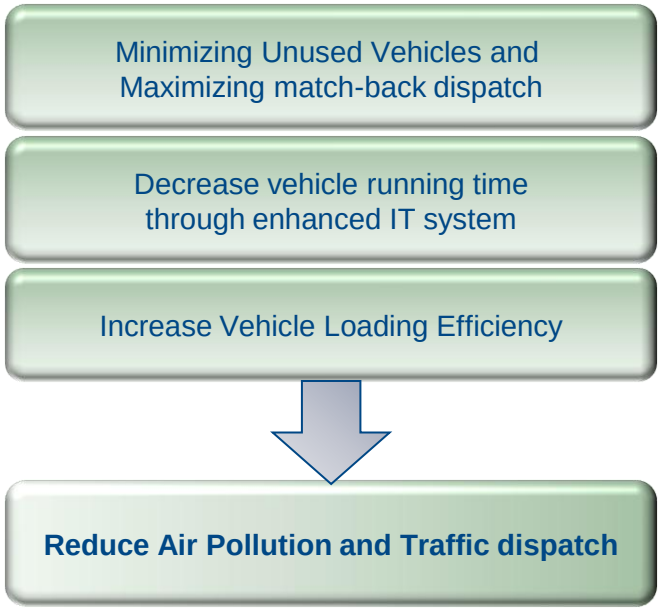
Decrease Number of Unused Vehicles Through a Cargo Information Network Project and Reduce Carbon Dioxide Emissions by Inducing Increase in Multimodal Transport

2.1 e-Trucking System

Theory Behind Carbon Dioxide Emissions Reduction

■ Start Cargo Information Network(2010)
- Suppress Unused Vehicles and Minimize Vehicle Numbers Through Multimodal Operation of Vehicles

→ **Reduce CO_2 Emissions**



Effects of the e-Trucking System

■ Decrease Unused Vehicles, Increase Multimodal Transport through Cargo Information Network(e-Trucking) Project

■ Cut Carbon Dioxide Emissions and Fuel Expense through Decrease in unused Vehicles

■ Advocate Importance of Green Logistics to Shippers/Car Owners/ Logistics Industries



II. Hanjin's Counter-strategy for Low-Carbon Green Logistics

Owing to switching Equipment fuel from Diesel to mixed Bio-diesel, CNG, LNG reduce CO_2 Emissions By Approximately 305 Tons

2.2 Use Alternative Fuels

Use Alternative Fuels for Loading Equipment

■ **Mixed Use of Biodiesel, CNG and LNG from Current Diesel**

- 305 Tons CO2 Emissions Reduction with Mixed LNG Use
- Yearly 3.87 Billion Won Reduction in Fuel Expense

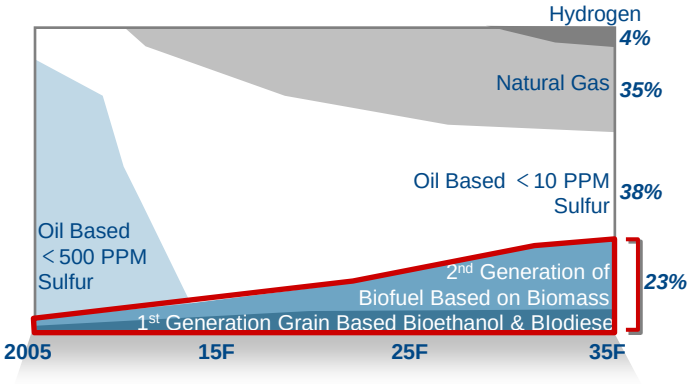
■ **Use Reductors/Catalysts for Loading Equipment**

- Prevent Gas Emissions Through Reductor and Reduce Gas Emissions Through Increase in Fuel Efficiency from Additives
- Approximately 70% Reduction of Exhaust (Nitrogen Oxides, etc.) expected

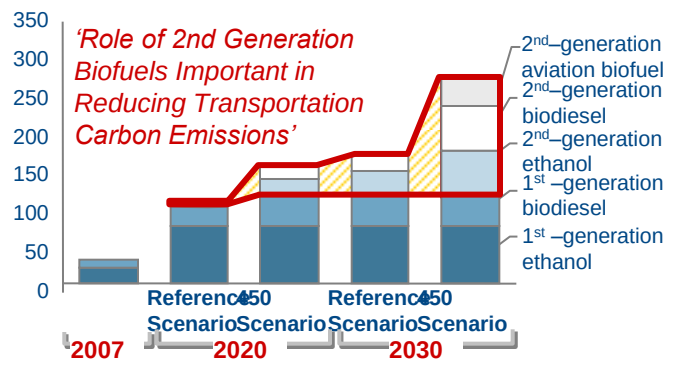


Importance of Biofuel

Market Outlook



Expected Carbon Reduction Effect



II. Hanjin's Counter-strategy for Low-Carbon Green Logistics

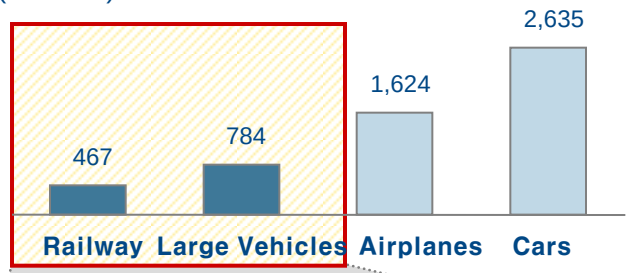
By means of modal shift between railroads, costal shipping and inland trucking increase utilization ratio of Low-carbon transportation option and reduce CO_2 emissions

2.3 Modal Shift

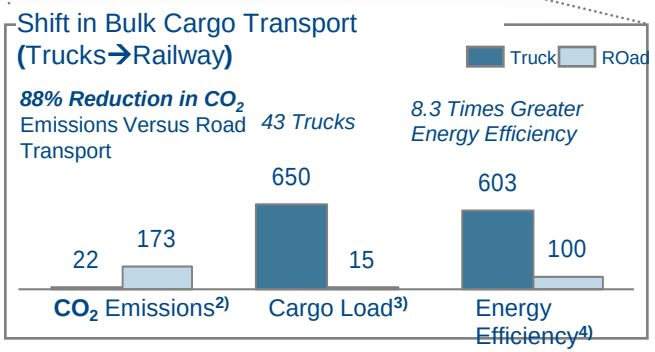
Expected Effect from Transportation Modal Shift

Energy Efficiency by Trans-Mode

(Unit : KJ)



Expected Effect from Modal Shift



'Can Expect Reduction in Carbon Emmissions from Change in Transportation Mode'

Status of Key Countries

EU

- **Policy Initiative to Promote Railway and Maritime Transport to Reduce Importance of Road Transportation**
  - Incentives for Using Non-Road Transport such as Railways as Part of Marco Polo Program
  - Recommend Using 1.5% of Total Transportation Network Budget on Canal Projeect Through NAIADES Program

U.S.A

- **Obama Administration's Initiative to Construct High-Speed Railway over Entire US**
  - Construction of 8 Billion Dollar High-Speed Railway to Reduce Importance of Road Passenger Transport

Japan

- **Action Plan to Reduce Emissions Based on Modal Shift since 2003**
  - Sustained Policy to Encourage Use of Railways and Coastal Maritime Transport and Improve Modal Shift Awareness for Car Owners and Logistis Businesses

Active Policy to Expand Logistics Proportion of Pro-Environment Transportation Modes Including Railways/Maritime Transport

Eco-Driving and Increase Understanding of Green Logistics Through Carbon Reduction Education for Drivers

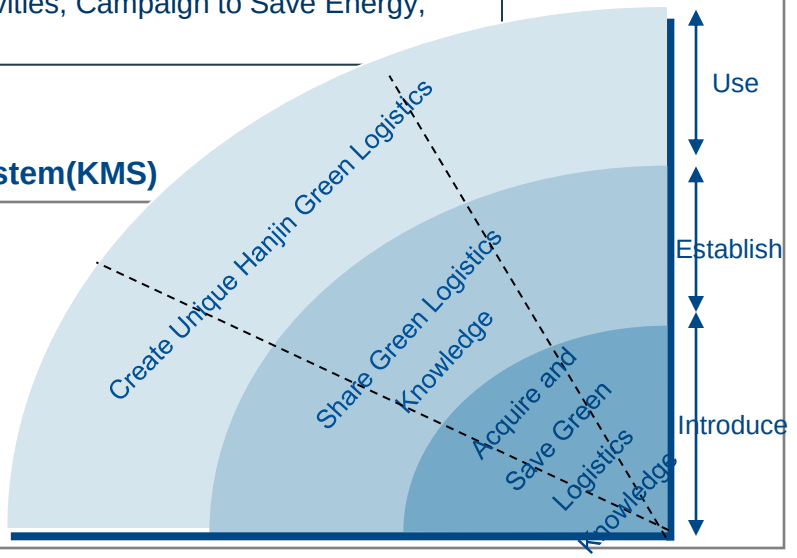
2.4 Echo-Driving

Increase Understanding of Green Logistics Through Carbon Reduction Education for Drivers

Echo Driving Education	▪ Keep to Economic Driving Speeds and Prohibit No-Load Rotation/Sudden Acceleration/Sudden Braking/Sudden Starts ▪ Conduct Echo-Driving Education at Cooperating Transportation Businesses (Monthly)
Educate Vehicle Managers	▪ Prohibit Inefficient Home Deliveries, Prohibit Discretionary Management Based on Convenience, Minimize Unused Vehicles
Employee Campaign to Reduce Emissions	▪ Encourage Bicycle Use, Promote Paperless Activities, Campaign to Save Energy, Water and Food Waste

Implement and Encourage Green Logistics Knowledge Management System(KMS)

- Create Organization to Spread Green Logistics
- Establish Notice Board to Share Green Logistics Know-how and Rewards
- Induce Continuous Improvements Through Establishment of Green Logistics-Related Knowledge Management



II. Hanjin's Counter-strategy for Low-Carbon Green Logistics

Get the maximum efficiency in traffic routing and operational process through introduction to a Smart-Green System
Optimizing delivery routes for home delivery service

2.5 Smart-Green System

Key Functions	Description	Carbon Emissions Reduction Factors
SMART Green Routing	• Auto Multi-Point Guide System • Information on Quickest Route Based on Current Traffic • Implement and Monitor ECO-Driving Mode - Restricts to and Measure Economic Delivery Speed - Warnings for Sudden Starts and Stops - Routes Based on Right Turns • Supplement Movement Restrictions of Navigation Systems	• Reduce Route Distance through Optimized Routes • Rapid Adjustment by New Employees and Reduce Route Time • Reduce Route Time by Evading Traffic Jams • Improve Fuel Efficiency through ECO-Driving Rule
Real-time Cargos Information	• Reflects Real-time Loading of Goods Information during Delivery Routes • Provides Goods Loading Rejection Function through AI Logic	• Minimize Route Distance through Reflection of Real-time Routes • Increase Efficiency by Preventing Inefficient Good Accumulation
Real-time Customer Information	• Informs Whether Customers are Home • Reflects Information on Possible Delivery Times • Automatically Send Message with Estimated Delivery Time • Automatically Send Information on Delivery Completion	• Minimize Late Delivery/Redelivery • Reduce Delivery Personnel Workload through CRM Function
Automatic Processing Function	•Automatic Processing of Loading Completion •Automatic Processing of Delivery Completion •Provide Information on Payment Method and Automatic Processing Function	• Reduce Vehicle No-Load Rotation Time per Customer by Simplifying Processing • Reduce Revisits through Accurate Processing



Reduce Exhaust through Pro-Environment, Low-Pollution Modifications(Install Exhaust Reducer)

2.6 Expand Introduction of Low-Pollution Vehicles

Lighten Vehicle Body



- Reduce Weight through Lightweight Springs
- Reduce Weight through Lightweight Sheets

Install Wind Deflectors



- Minimize Air Resistance Through Wind Deflectors

Modify to LNG Engines



- Modify Owned Vehicles to LNG (Selected Tractors)

Install Exhaust Reducer



- Directly Reduce Carbon Emissions Through Exhaust Reducers

II. Hanjin's Counter-strategy for Low-Carbon Green Logistics

Promote Pro-Environment Transport through Operation of "Hanjiin Cheongjungnoori" for Low-Level Nuclear Waste and "Hanjin Green" for bituminous coal

2.7 Operation of Owned Green Logistics Ships (Green, Cheongjungnoori)

Strengthen Fuel Transportation Capacities for 'Hanjin Green'

■ **Used to Transport Bituminous Coal, Fuel for Generators at the Yeosu Coal Power Plant of Korea South-East Power Company, from the Nakpo and Gwangyang Ports in Yeosu since August 2011**

- Length 109m, Width 24m, Speed 12 knots
- 10,000tons, 2nd bituminous coal only ship in South Korea
- Self-Unloader that can automatically unload bituminous coal for safety and efficiency



'Hanjin Cheonjungnoori,' Specialized for Low-Level Nuclear Waste Transport

■ **Possess Structural Safety and State-of-the-Art Safety Equipment to Prevent Leakage of Nuclear Waste**

- Designed to prevent leakage of nuclear waste, in compliance with domestic Law for Safety of Vessels and IMO International Standards
- Possesses structural safety with twin engines and a double hull
- State-of-the-art vavigation systems including an automatic collision prevention system



Carbon Emissions Reduction Initiative Through Green Logistics Cooperation System such as dispatching the Appropriate type of Vehicles, Modal Shift and Development of Pro-Environment Transportation Modes

2.8 Establish Green Logistics Cooperation with Customers

Green Logistics Cooperation with Company 'P'

- Reduce Carbon Emissions Through Modal Shift from Land to Sea and Railway

구분	출하량	%	CO_2 배출량 (g/톤,km)	CO_2배출 총량
계	18,392	100	-	408
육송	12,214	67	145	271
해송	5,341	29	38	117
철송	837	4	22	20

[2009]

구분	출하량	%	CO_2 배출량 (g/톤,km)	CO_2배출 총량
계	23,740	100	-	362
육송	11,870	50	145	175
해송	9,496	40	38	147
철송	2,374	10	22	40

[2011]

- Larger Transportation Vehicles within Steel Complex (Increase Load Efficiency)
- Introduction of Mixed LNG-Diesel Fuel Cargo Trucks
- Develop Specialized Steel Cargo Ships using Wind Power







Signed an Logistics Energy Goal Management Agreement in November 2010 for National Emissions Reduction Goal Project to Reduce Logistics Emissions by 16.2 million tons

2.9 Signed Logistics Energy Goal Management Agreement (November 4, 2010)

Hanjin Makes Full-Scale Green Logistics Push by Participating in the Logistics Energy Management System

■ Participating Companies

Year	Logistics Companies	Customers	Total
2011	14, including CJ GLS	3, including Yuhan-Kimberly	17
2010	8, including **Hanjin**	3, including Samsung Tesco	11
Total	22	6	28

- Attract Transportation Companies with 100+ Cargo Trucks and Major Customers with Yearly Transportation of 30 Million Tons, With Goal of 50 In 2012 and 50 in 2015

■ 7.8% Emissions Reduction Versus 2009 by Participating Companies in 2010

■ Five-Stage Goal Management Activities

Set management range, calculate items including energy, set reduction goals, execute reduction project, analyze effects and report to government





Green Logistics and the Future of Hanjin

Acquire Key Future Capabilities Through Sustainable Management and Green Logistics Strategies on an entire corporate base

Green Logistics with HANJIN



III. 'Proposal on Inter-Country Green Logistics Cooperation'

Raise a Create Northeast-Asia Green Fund

- Advocate Cooperation Among Korea, Japan and China to Reduce Carbon Dioxide Emissions and Energy Saving Among Corporations
- Protect Water Resources, Develop Clean Energy, Develop Technology and Joint Cooperation
- Create Cross-Country Eco-Park to Strengthen Green Energy Cooperation

Joint Research Center Initiative Among Korea, Japan and China to Establish Long-Term Green Growth Infrastructure

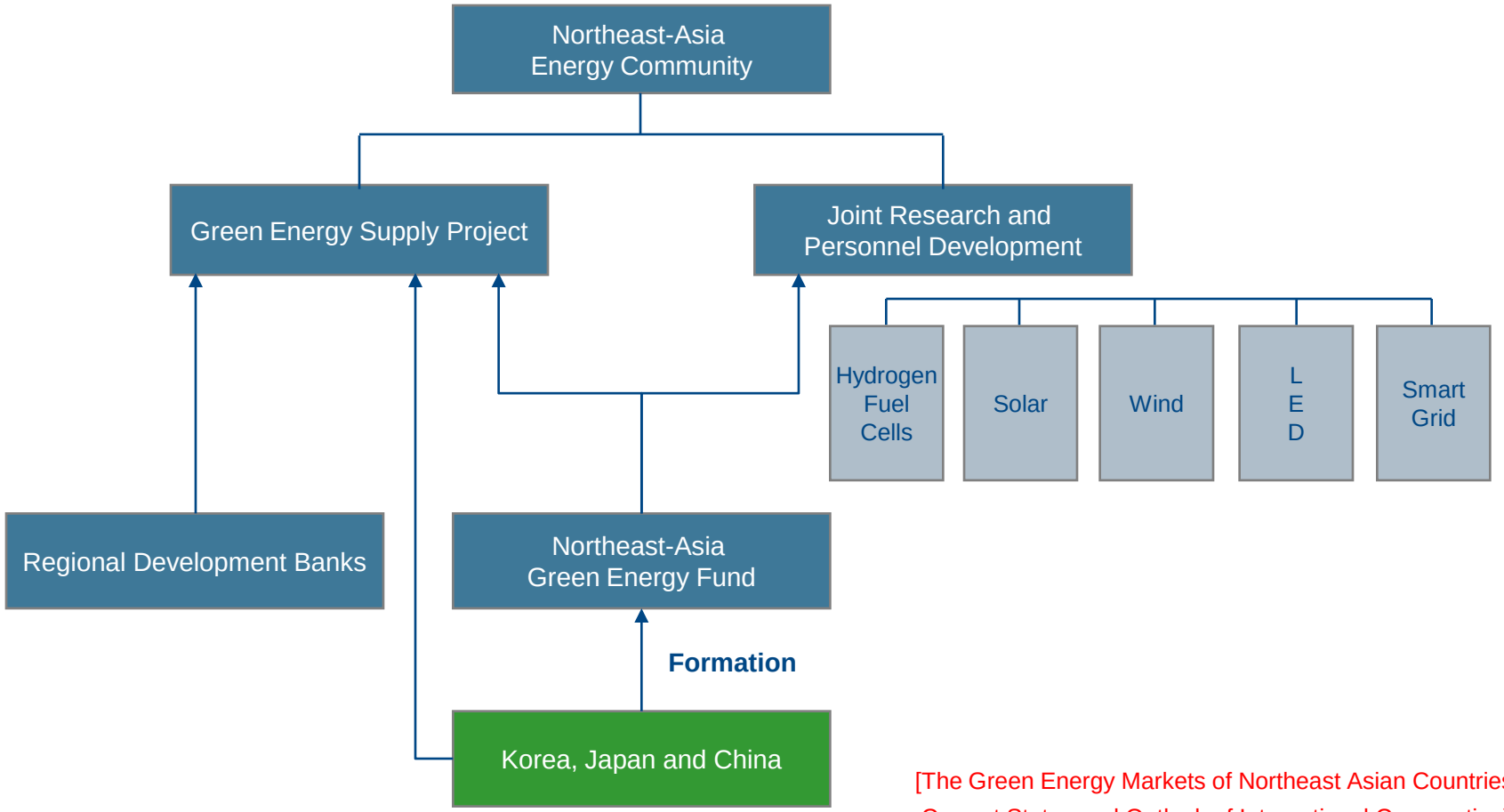
- Joint Research Network Initiative for Each Area Between Existing Industry, Academia and Research Centers
- Information Sharing by Nations/Corporations with Advanced Green Logistics Technology and Joint Pursuit of Regional Green Growth

Short-Term Coopeartion Program Centered on Gorvernmental and Private Sectors incorporated in Korea, Japan and China

- Simultaneously Support Creative Proposals from Corporations and the Private Sector (Marco Polo Program)
- Short-Term Service-Oriented Programs Centered on Corporations and the Private Sector Needed

III. 'Proposal on Inter-Country Green Logistics Cooperation'

Northeast-Asia Green Energy Development Cooperation Initiative



[The Green Energy Markets of Northeast Asian Countries and the Current Status and Outlook of International Cooperation]
- Ministry of Knowledge Economy, Korea Energy Economics Institute(2009)

Thank You



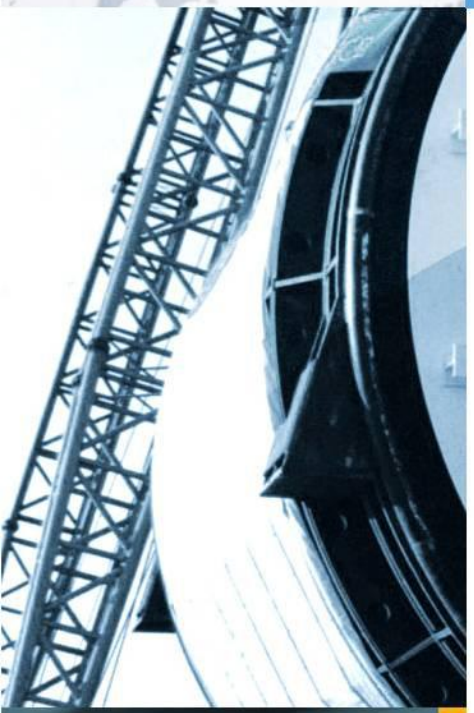
TO SHAPE Green Supply Chain

TO ENHANCE Core Competencies

COSCO Group -Deputy General Manager
Ye Weilong



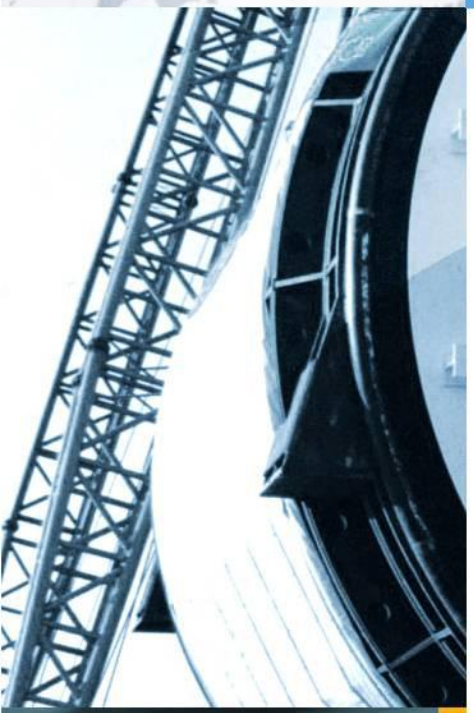
Green Supply Chain



Green Environment Protection

Commitment to society, humanity and nature

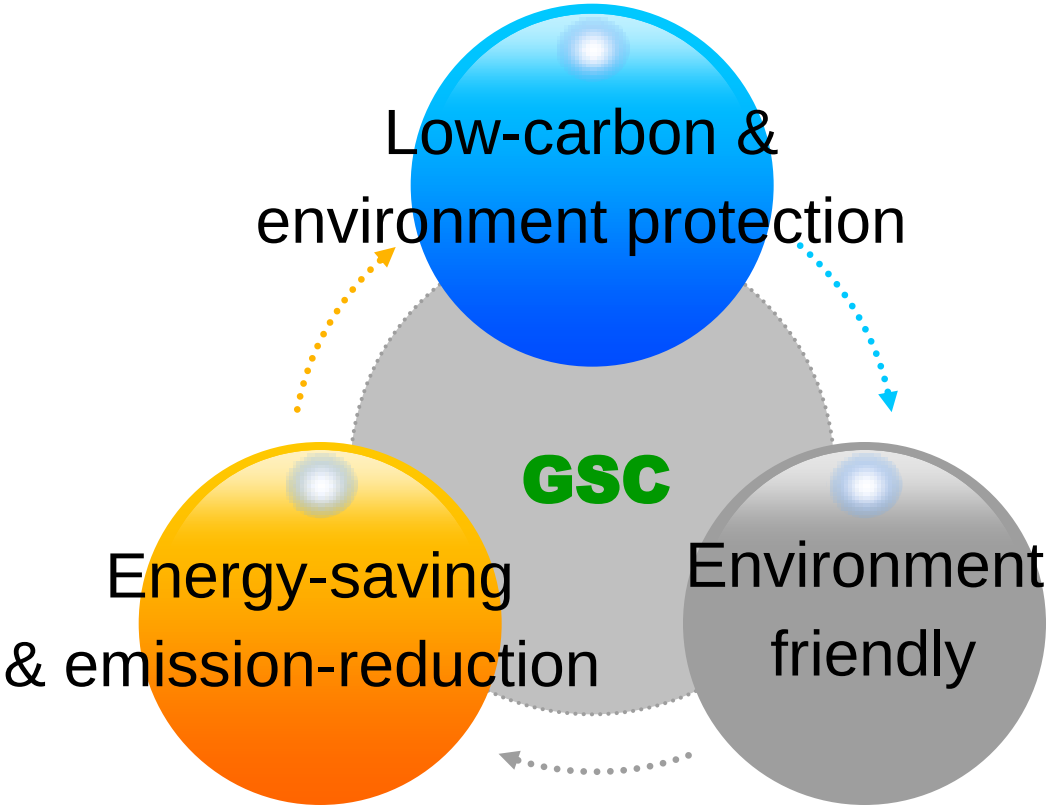
Measure of enhancing core competencies



COSCO has joined UN Global Compact since 2005.

Based on Global Compact and its ten principles, COSCO set out its own implementation plan of global compact and sustainable development, with a aim to become a conservation-oriented and harmonious enterprise, and achieve sustainable development and harmony between enterprise value and natural resources.

Hard Core of GSC





Shape a Green Supply Chain

COSCO Shape Green Supply Chain







The Ship Fleet

COSCO owns and takes control of various types of modern merchant ships up to 800, which is more than 55 million tons deadweight, and handles over 400 million tons cargo volume p.a.

COSCO ships are able to call 1,600 ports in over 160 countries and regions globally, and the fleet size ranks first in China , and is second in work ranking.

Green new technology in sea carriage

The best ship's type propulsion system

- Using simulation tools to optimize ship's linear propulsion system, and to reduce water resistance and improve propulsive efficiency ;

Using FRAME WORK optimization software to analyze and compare ship's linear data from multi-draft and multi-speed, so as to achieve the best ship's linear shape in term of low resistance and high propulsive efficiency.

- To get the lowest fuel consumption though the ship model testing.

Ship's low-carbon control system

- Carry out research of key technique of wing design & manufacture, and wing-propulsion-control jointly manipulation system;
- On the condition upon meeting navigation performance requirements, save energy by 5%-10% and reduce carbon emissions by 10%.

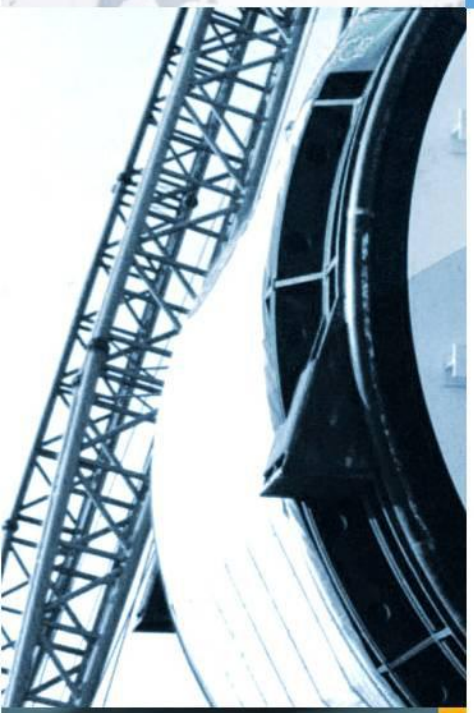
Green new technology in Sea Carriage

Ballast water purification

- The ballast water purification system is made up by filter, MV-UV reactor and control unit, which is a integrity application system and includes life science, material science, fluid mechanics, optics, environmental science, ship design, and other related subjects.
- This system has advantages of stable, effective, wide applied range and without toxic side effects.

ship's environment friendly paint

- Ship's paint does not comprise lead, tin and other harmful substances.
- Ship's paint drives away but does not harm marine creatures, which is a environment friendly coating with functions of adhering prevention and non-polluting at the same time.
- Non-polluting, resource saving, energy efficient green coating, such as water-based paint , powder coatings and radiation curable coatings.



Energy-saving achievement in sea carriage

With the implementation of energy-saving and technology transform project in 2011, COSCO achieved great improvement compared with that in 2010:-

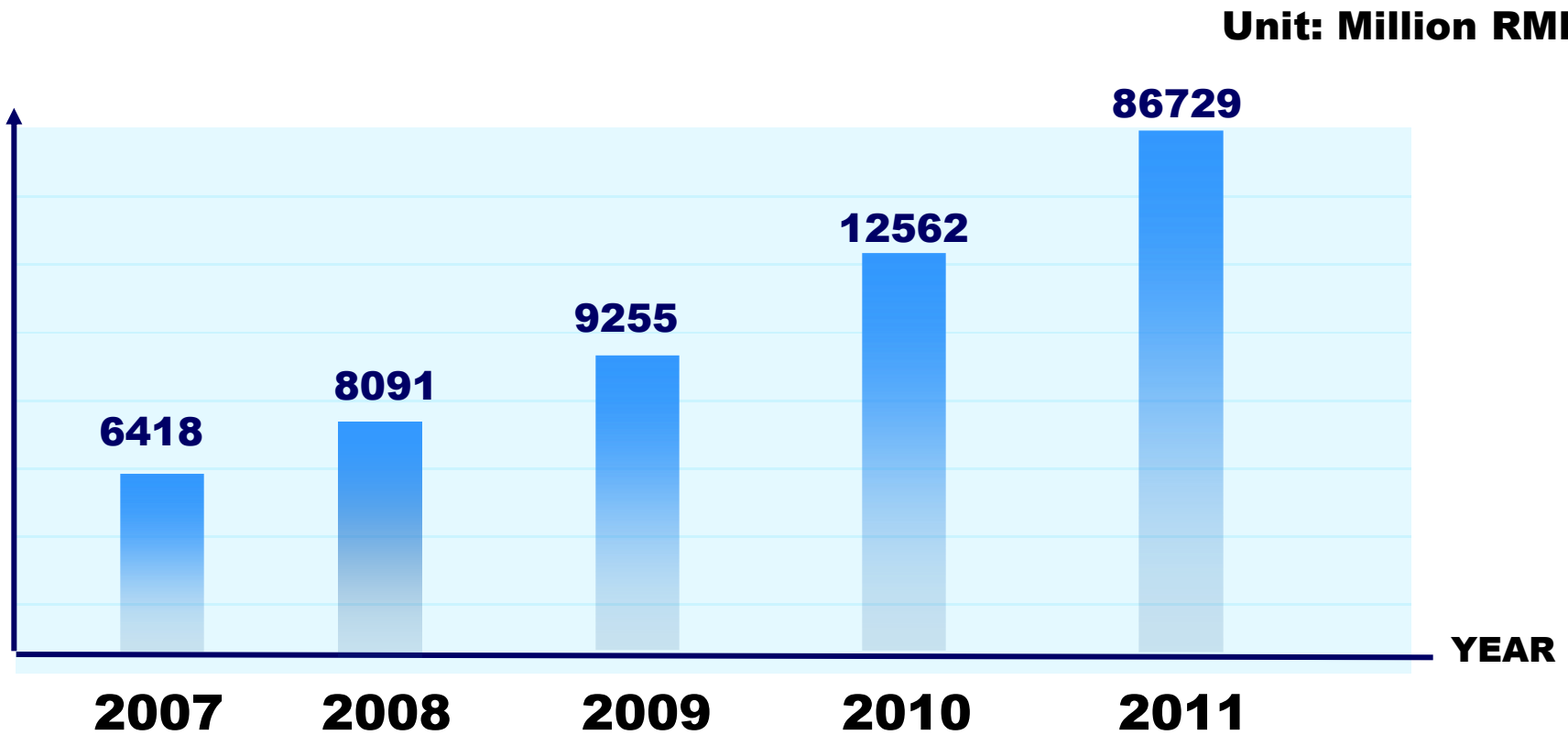
fuel consumption of container vessel decrease 12.56% per unit per day;

unit consumption per mileage decrease 5.02%;

fuel saving 30,500 tons, equivalent to 46700 tons standard coal;

reduce carbon dioxide (CO_2) emission 94900 tons, sulfur oxides (SOx) 1800 tons, nitrogen oxides (NOx) 2700 tons.

Environment Protection Expenditure in COSCO







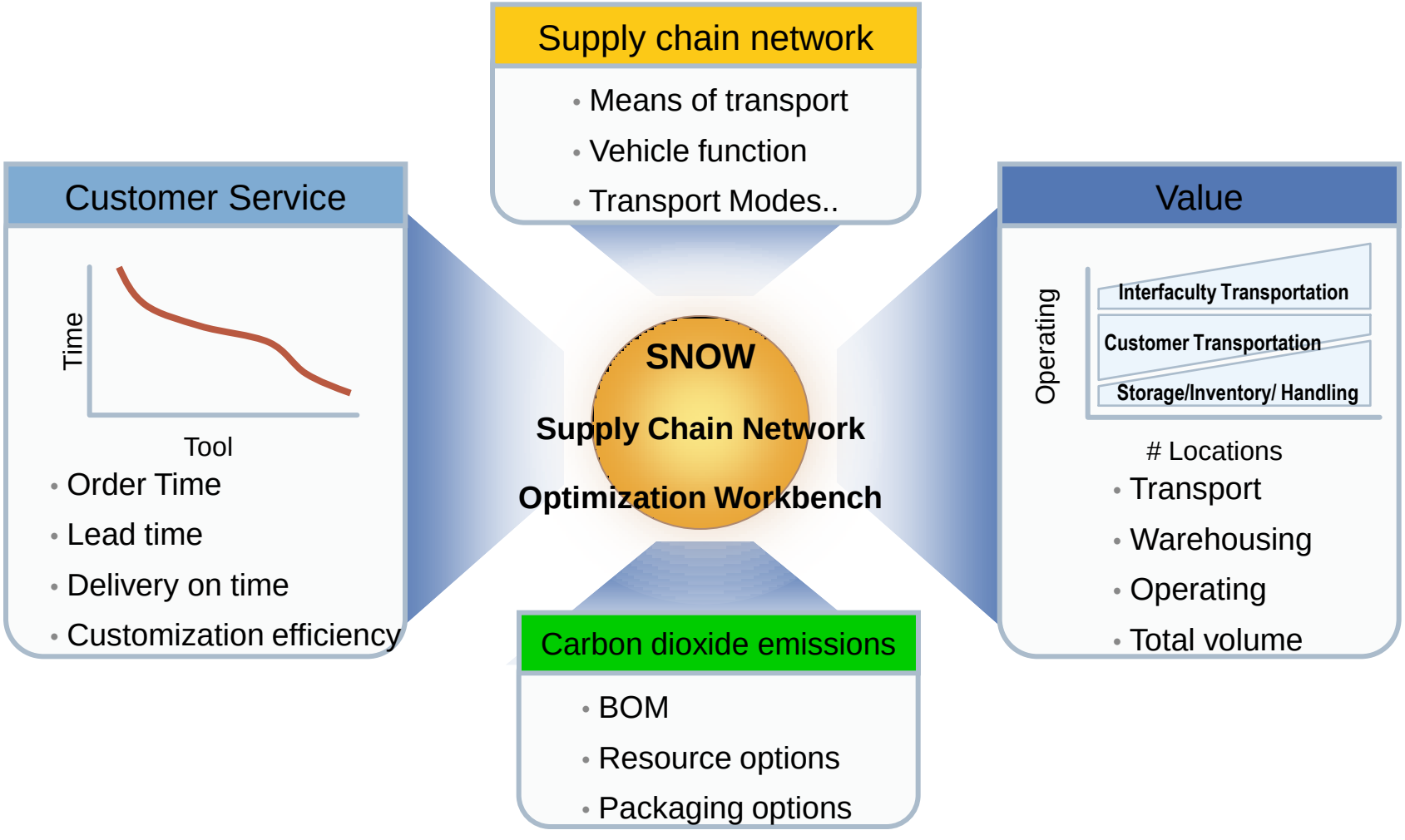
The Vehicle Fleet

COSCO has land based logistics facilities in abundance, and operates over 5,000 automobile carriers.

COSCO takes the lead in HSE management system implementation, and getting past of ISO14000 environment management system & OHSA18001 occupational safety and health management system.

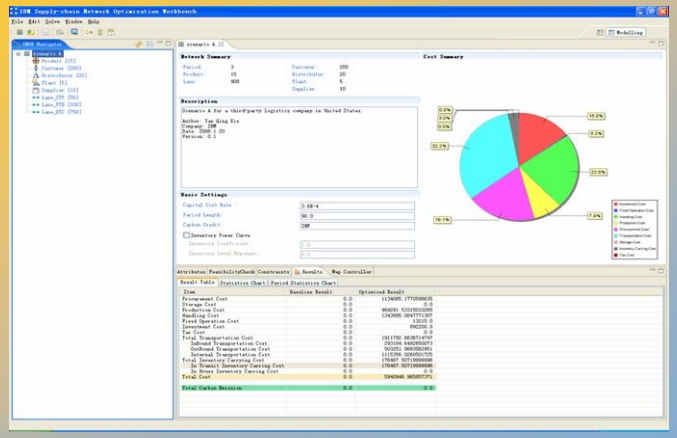
In addition, COSCO invests huge amount annually for vehicles and facilities updating and transform, in order to meet all ecology environment requirements.

Balanced application of Value, service, and carbon dioxide alternate in SCM

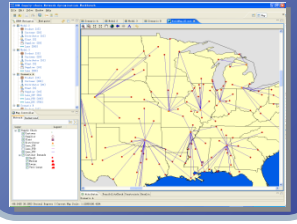


Application of SNOW in reality

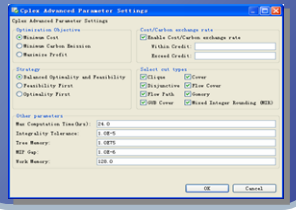
SNOW



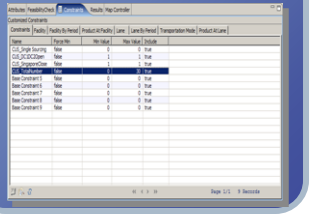
Geographic Information



Carbon dioxide sensitivity



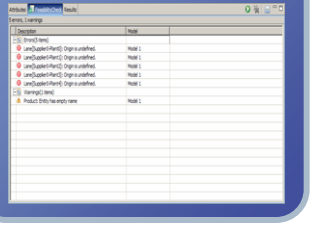
Operation integration



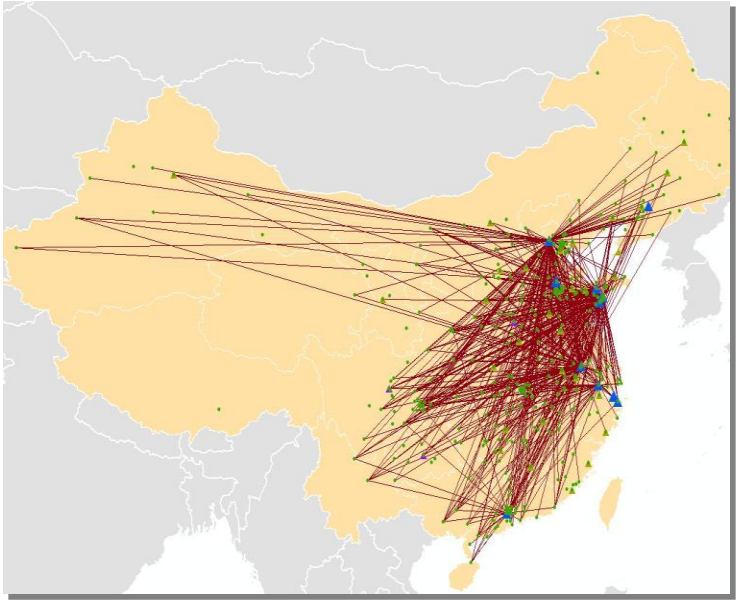
Simulation



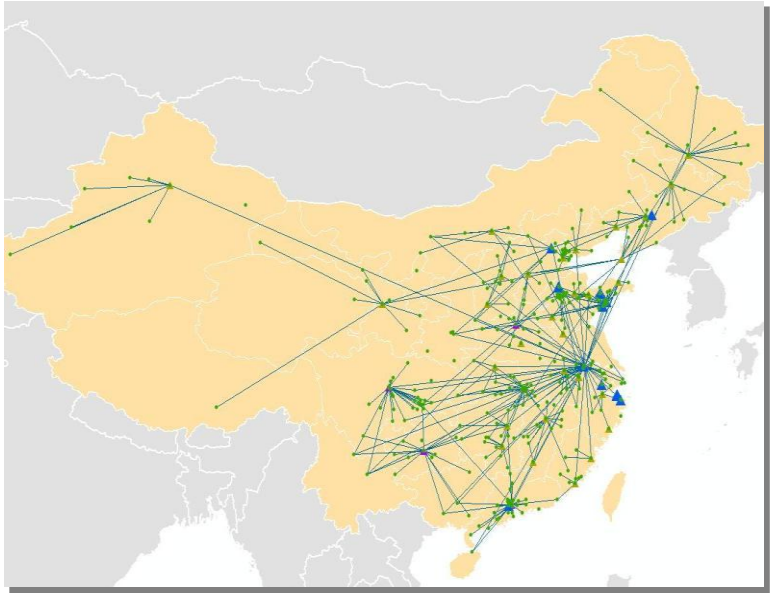
Data processing



Energy-saving achievement in road transport



Before Optimization



After Optimization

- Analyzed over 100 million historical distribution data, and verified over 8,000 addresses
- Processed more than 4,000 tariffs, and reduced carbon emissions by 10%
- Reduced 100,000 tons of carbon emission annually, equivalent to 440 thousand tons of gasoline saving
- Amount to 2 million square meters of green broad-leaved forest





The warehousing & distribution scale

COSCO owns warehousing capacities up to 1.052 million square meters;

container yard about 771,000 square meters.

(among them, 590,000 square meters belongs to chemical warehouse)





The achievement of energy-saving in warehousing & distribution

- During cooperation with first class chemical enterprises, like Dow, Bayer, etc., COSCO has established similar quality systems and environment protection system, which are same standard as those multi-national chemical companies.
- COSCO applies real-time monitoring system in warehousing and distribution, to prevent environmental influence during operation and transportation.
- In chemical logistics, COSCO has established emergency response system, so as to take quick action in case of emergency and minimize environmental impact.

Environment friendly – Qinghai-Tibet Railway



In Qinghai-Tibet Railway project, COSCO reduced vehicle exhaust to prevent environmental influence along the way through vehicle modification, and created a miracle that locomotives were carried by trucks on the world highest snow-covered plateau.

Environment friendly – **Green Flag**



COSCO Launched "Green Flag" environment protection program in Long Beach Port U.S., which requires all ships in & out Long Beach to keep speed limit under 12 knots within 35 nautical miles of pilot station, in order to reduce exhaust gas emission caused by fuel combustion.

Environment friendly – Marine Creature Protection



COSCO formulated policies to protect bio-diversity: -

Use non-toxic paint during ship build and repair to protect marine organisms;

Lay down ballast water plan in advance to protect the living environment of marine creatures;

Implement international safety management code strictly, to prevent any sea pollution and harm to marine creatures.

COSCO Group will continue to fulfill the requirements of international conventions and regional rules, adhere to the guidelines of attaching equal importance to develop and energy-saving, laying equal stress on development and conservation.

In addition, focusing on introducing and generalizing new energy-saving technology and process, aiming to become a conservation-oriented enterprise, COSCO has defined management targets and responsibilities clearly and strictly, strengthened staff's awareness of energy-saving and environment protection, thus made considerable contribution to energy-saving and emission-reduction, environment protection and social responsibility as well.

THANK YOU