Northeast Asia Economic Forum

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Regional Port Cooperation for Supply Chain Integration

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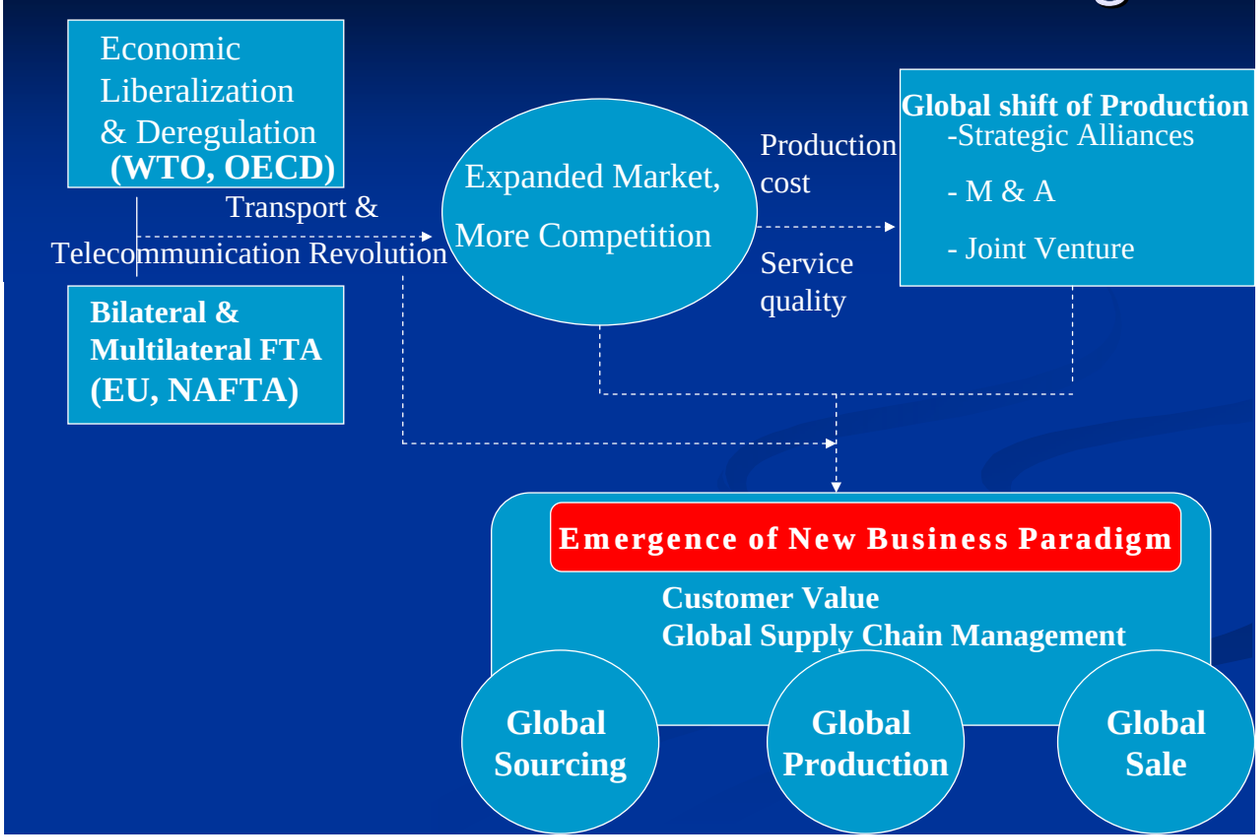
1. Globalization & Importance of Supply Chain Management

Globalization & New Business Paradigm



Shifting Economic Characteristics

	Old Economy	New Economy
Nature of Production	Mass Production Integrated, Large-Scale Factories	Flexible Specialization Strategic Alliances, Outsourcing, Project Teams
Key Requirements	Quantity Low Cost Stability Control Mass Market Reach	Quality Speed-to-Market Flexibility, Innovation Networks Customer Service, Customization
Key Inputs	Capital Equipment Production Labor Natural Resources	Technology (especially Information Technology) Knowledge Workers Information
Geographic Focus	Nationalism	Globalization

Source: SRI International, Global Impact of Fedex in the New Economy

CSCMP Definition of Supply Chain Management

- Supply chain management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third party service providers, and customers. In essence, supply chain management integrates supply and demand management within and across companies.

CSCMP Definition of Logistics Management

- Logistics management is that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements.

On the importance of Supply Chain Management

- "In this emerging competitive environment, the ultimate success of the single business will depend on management ability to integrate the company's intricate network of business relationships or supply chain management. "

Professor D. M. Lambert, 「Supply Chain Management」, 1999

A CEO's View on the Importance of SCM

John F. Welch Jr. (CEO, General Electric, 54)

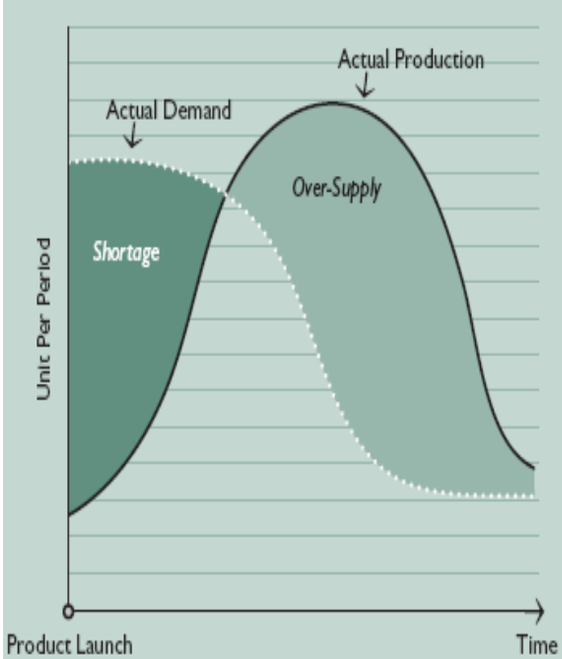
Globalization is now no longer an objective but an imperative, as markets open and geographic barriers become increasingly blurred and irrelevant.

The winners of the Nineties will be those who can develop a culture that allows them to move faster, communicate more clearly, and involve everyone in a focused effort to serve ever more demanding customers.

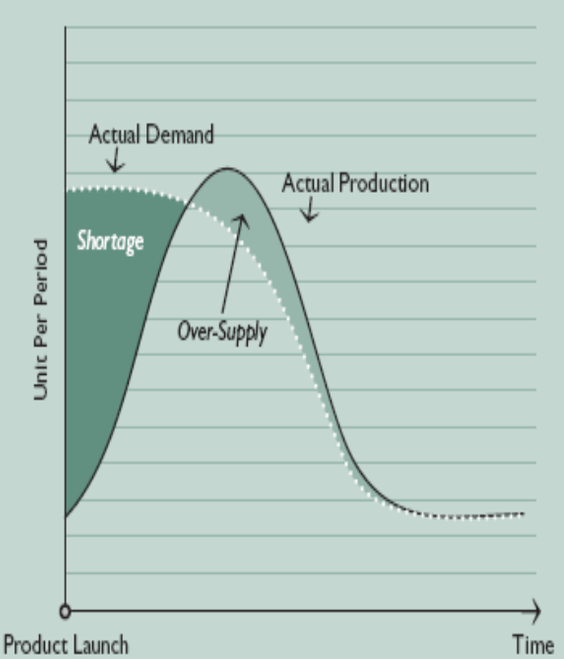
The lines between the company and its vendors and customers must be blurred into a smooth, fluid process with no other objective than satisfying the customer and winning in the marketplace.

「Fortune」, March 26 1990

The Power of Supply Chain Management

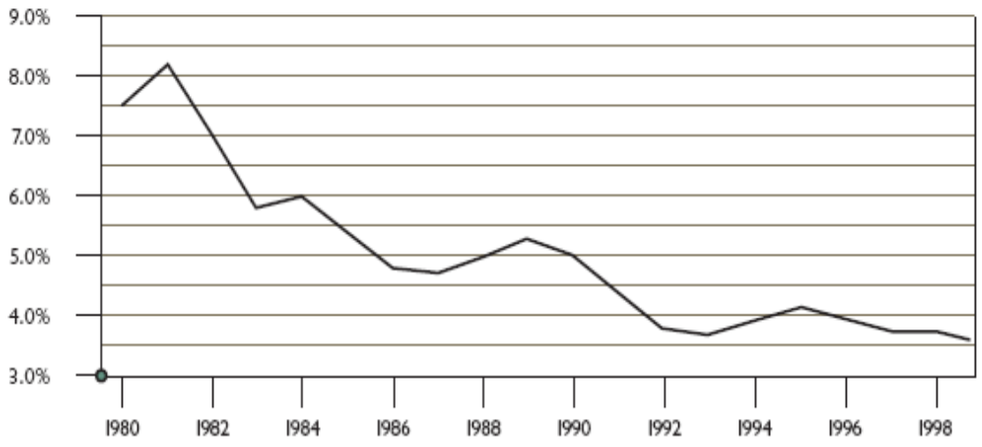


A. Supply and Demand Misalignment



B. Supply Chain Management Minimizes Shortages and Excess Inventory

Inventory Carrying Costs as a Percentage of GDP



Source: Cass & ProLogis

Impact of Globalization on Logistics Management

- Relocation of production facilities and warehouses
  - ➡ Increased hauling distance and quantity
- Supply chain integration
  - ➡ Fewer suppliers, logistics providers
- Inventory management by cross docking, JIT deliveries, etc
  - ➡ Smaller package and short transport time
- Mass-production to Mass-customization
  - ➡ Frequent delivery and smaller package

Supply Chain Management

- is a critical factor in global firms' competitiveness and business performance
- is also an important driving force for the change in the way cargoes are handled by shipping, port and road haulier industries
- will eventually change the role and function of transport industry itself

Changes in Ports' Characteristics and Function in Supply Chain

Past	Now & Future
▪ Simple entry and exit point of export and import cargoes ▪ Traditional, sub-optimized, unorganized, complicated ▪ Reactive or passive to new ideas	▪ Logistics center on International Supply Chain ▪ State-of-art service industry armed with newest IT software and management skills ▪ Proactive and agile to new mgt' concept

2. Growth in NE Asia's Trade and Logistics Challenges (Container Transport Sector)

NE Asia's Share in World Trade (2005)

(billion U.S. dollars)

	Export		Import	
China	762.0 (7.3%)		660.0 (6.1%)	
Japan	594.9 (5.7%)	15.7 %	514.9 (4.8%)	13.3 %
Korea	284.4 (2.7%)		261.2 (2.4%)	
Russia	243.6 (2.3%)		125.3 (1.2%)	
World	10159.0 (100.0%)		10,511 (100.0%)	
U.S.A	969.9 (9.3%)		1,732.4(16.1%)	

Source: World Trade Organization

China leads in Asian trade growth

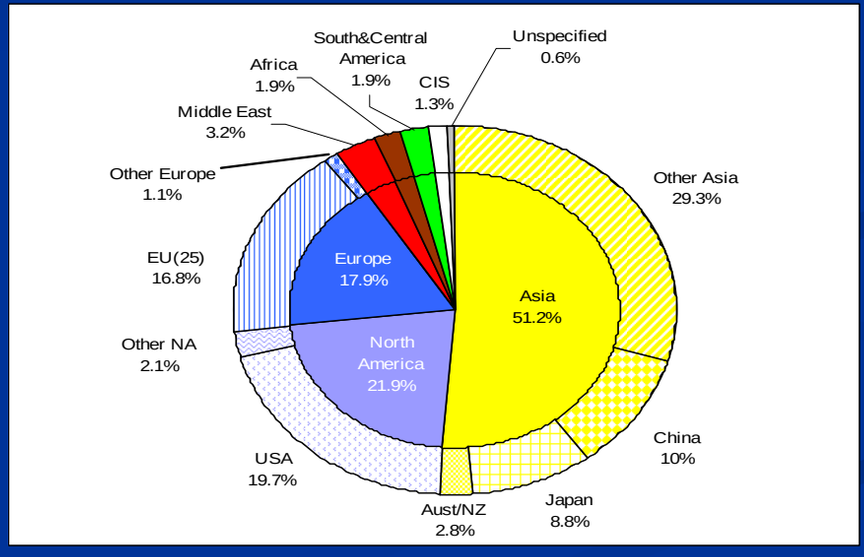
($ billion)

	1997	1999	2001	2003	2005	2006
Exports	182.7	194.9	266.2	438.2	762.0	969.1
% change	20.9	6.1	6.8	34.6	28.4	27.2
Imports	142.4	165.7	243.6	412.8	660.0	791.6
% change	2.6	18.2	8.2	39.8	17.6	20.0
Total	325.1	360.6	509.8	851.0	1,421.9	1,760.7
% change	12.1	11.3	7.5	37.1	23.2	23.8
Balance	40.3	29.2	22.5	25.5	102.0	177.5

Note: PRC exports reported on a FOB basis; imports on a CIF basis
Source: PRC General Administration of Customs, *China's Customs Statistics*; and the National Bureau of Statistics

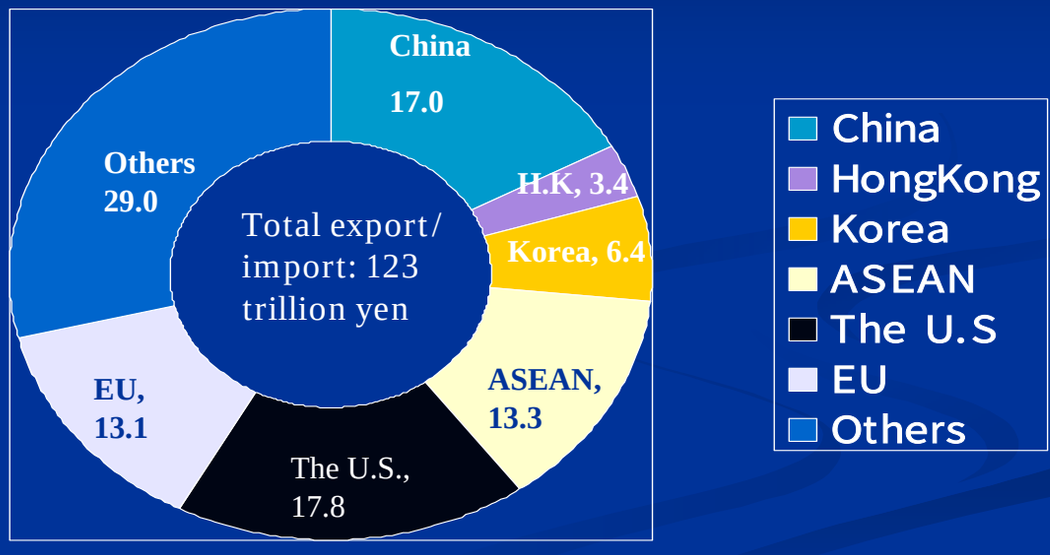
Half of Asian nations' trade is with its neighbors

Asia's merchandise export by region (2005)



Source: www.wto.org

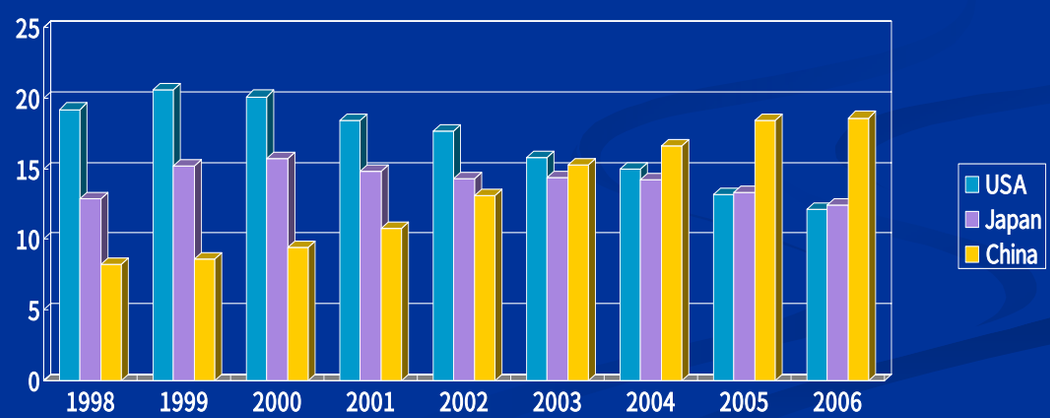
China with H.K. is now Japan's biggest trade partner



Chino-Korean Trade continues to grow as well

- China became Korea's the biggest trade partner in 2004

(As % share of Korea's export and import)



Challenges in NE Asia's Logistics

Asia's Container Shipping: Unprecedented Growth

- Full containers shipped worldwide

2001	2006	
60.5 mil.teus	110.2 mil.teus	(AAGR: 10.5%)

- UNESCAP Forecast for 2015: 177.6mil.teus

From 2002 to 2015

East-West Trade: 34 mil. teus to 70 mil. teus

North-South Trade: 17 mil. teus to 36 mil. teus

Intraregional Trade: 28 mil. teus to 72 mil. Teus

Most spectacular growth forecasted for Intra-Asian Trade!

Intra-Asian Shipping Route (Japanese case)

- Japan's International shipping services increased 11% during 2001-2006

  From 830 to 917 weekly services

- But shipping services with China increased 44%: From 227 to 328 weekly services
- Total weekly container shipping services from important ports*

  North America: 84, Europe: 22, Asia: 652 (China, 290; Korea, 166)

  * 特定重要港灣

World Container Port Throughput Forecast

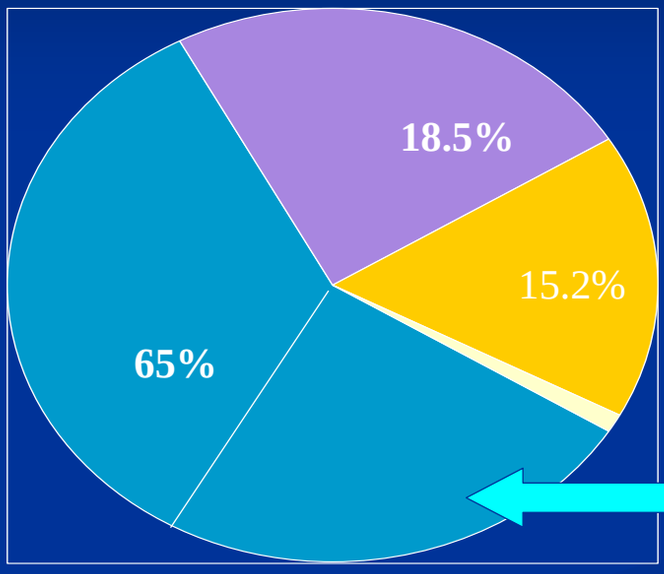
Million TEU

	'04	'05	'06	'07	'08	'09	'10
world	358	397	432	473	515	559	600
Far-east	120	137	152	169	187	205	225

Source: Drewry, Annual Review of Global Container Terminal Operator 2005

- For the last 5 years world port throughput increased at AAGR of 11% largely due to increased T/S cargoes and high growth in Chinese ports.
- AAGR (2004-2010): world, 8.9%, Far-east, 11.0%

Asian ports' share in world container traffic (2005)



Total 297 million teus handled

- Asian ports
- European ports
- American ports
- others

Top 8 chinese ports: 26.5%

Critical Question

Are Asian ports ready to handle the hugely increasing container cargoes efficiently and connect to other logistics nodes to meet global firms' supply chain management standards?

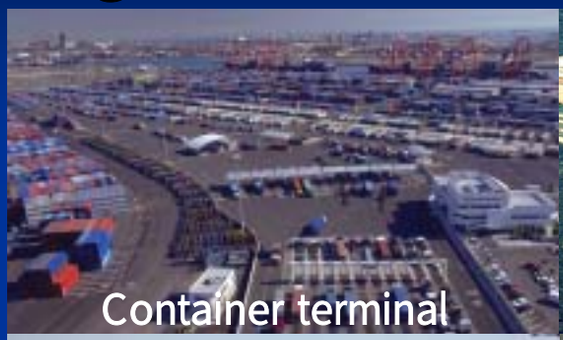
Tianjin: Thriving Economy Push for a Bigger Port

- Tianjin is the second largest comprehensive port in China
- Thriving economy of Tianjin and Jingjinxi hinterland is increasing port throughput dramatically
- By 2010 Tianjin's port traffic will exceed 300 mil. M/T

Continued -

- Container handling capacity should be expanded to at least 10 mil. TEUs by 2010 to accommodate exploding container traffics
  - In 2006, Tianjin handled 5.9 mil. TEUs, up 23%
- Other port facilities, connecting road and railroad, deep-water navigational channels are indispensable, including the largest bulk cargo center in North China

Thus, Tianjin need to supply vital logistics facilities simultaneously

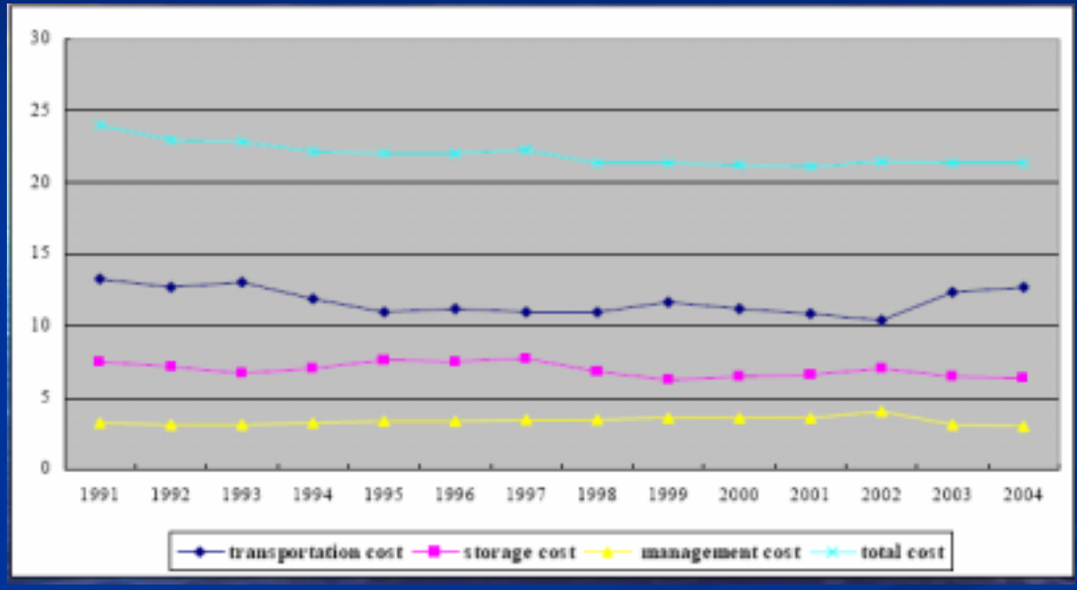

Container terminal


Road connections


Inland container depot


Value added logistics facilities

High logistics costs are big burden to China (logistics costs as % of GDP)



Source: Ru Yi-yong, *The Characteristics and Strategy of Chinese Logistics and Transportation Policy and Its Implication*, Dec. 7 2005. (Presentation material, PDF file

Logistics Costs of China vs. the U.S

- China's logistics costs in 2004: 2.9 trillion yuan, 21% of China's GDP vs. the U.S's 8.6% (2005)
  Japan's 11%
- In the first three quarters of 2006: 2.6 trillion yuan, 13.7% increase in real term but its portion to GDP decreased to 18.5%
  (China Federation of Logistics and Purchasing)
- These costs are not burdened to China alone. They will be transferred and distributed to all other trading partner countries !

NE Asia's Logistics: challenges ahead

- Urgent need for infrastructure expansion to meet exploding growth in container transport sector
- Streamlined logistics chain needed to cut excessive logistics costs
- Amending multiple governments' bureaucracies
- Limited budget for infrastructure construction

Other Challenges, too

- Absorption of new technologies to enhance the efficiency in logistics operation

  ex) RFID tag
- Very Large Container Carriers
- Port security issues
- Using a common communications infrastructure, etc.

RFID, An innovative breakthrough in logistics industries and SCM

- RFID-based logistics is ultimate goal of all logistics players
- Many ports are now testing this state-of-the-art technology: Shanghai, Oakland. Busan……
- Application of the tested RFID technology to Gate automation, Yard management, Container tracking and Terminal management can enhance port efficiency

Continued -

- According to Korea's test project (2006), *the lead time in* gate operation: 50%⬇ yard location: 45%⬇ ship loading: 20%⬇
- Overall, 44% of terminal productivity increase expected

Continued -

- If RFID container tags are applied to port-related logistic process, productivity gain would be much greater
  - Port efficiency will be enhanced dramatically and so it can reduce enormous port development pressure and budget
- Meanwhile, ISO recently approved the U.S standard RFID based e-seal technology
  - So, terminals processing export containers to the U.S are obliged to use the RFID-based system in the near future

- Very Large Container Carriers (VLCC) are joining the market
  - Vessels larger than 7,500 teus

1995	2000	2007	2010*	
0	10	147	293	
0	80,822	1,250,000	2,631,348	teus
(0%)	(1.8%)	(13.1%)	(18.7%)	of world total capacity

  - The TEU capacity of vessels over 5,000 teu will be 40% of world total in 2010.

Demand for bigger terminal, equipments and more hub & spoke transshipment

An Honest confession of port community

- We do not have an "intermodal system" as such. Rather we have an aggregation of multiple, private and public modes, each of which are "stove piped" within their own individual areas of interest with little or no true cross communication and collabolation.

(during the 2007 IAPH Conference in Huston, Texas)

3. Necessary Actions by NE Asian Ports and Logistics Community

Understanding current status of NE Asian ports

- Globalization, door to door concepts, lean management and just-in-time production…contributes shippers requesting integrated and "lean" logistics chain
- So, the role of ports evolves from mere entry and exit points for exports and imports to
  1) logistics centers offering value added service and
  2) transport solution providers in international transport chain.

continued -

- This new demand for ports, more clearly perceived in NE Asia because,
  - China's continuing export boom and increasing intra-Asian trade creates enormous logistics challenges for NE Asia's logistics community

- So, NE Asian ports, among logistics community, can take a first step to respond against these challenges

"Lean port network" is essential for NE Asia's logistics community

- A good container port should be
  - flexible, adaptable and responsive in rapidly changing logistic environment
  - a knowledge center
  - lean port, (efficient and cost-effective)
- In order to be competitive, lean port should form a "lean port network" by inviting other ports and logistic nodes like ICD, dry ports, ODCYs and freight stations

Continued -

- This “network” can be made by cooperating with other ports bilaterally or by establishing a regional organization for port cooperation.

Why cooperation among NE Asian ports?

- Improve terminal efficiency through exchanging operational experiences and technologies
- Trade promotion by developing more efficient logistics chains in NE Asia
- Reduce overall logistics costs to the level of developed countries
- Adapt better to rapidly changing shipping and port industry environment

  - Increase bargaining power against powerful shipping lines’ with VLCC and consolidated port operators

continued

- Reduce excessive terminal development pressure in short period of time
- Development and application of new logistics machinery and technologies, ex) RFID
- Common efforts, at regional level, to deregulate to reduce logistics costs and speed up logistics processing
- Funding for necessary infrastructures at regional level through “NE Asia Development Bank”

Different Channels of Cooperation

- Port to Port bilateral
  - Most common among ports as shown
  - NY-NJ, Copenhagen/Malmo type merger, etc
- Regional Bodies
  - Baltic Port Organization (BPO)
  - European Seaports Organization (ESPO)
- International Organization
  - International Association of Cities and Ports (IACP)
  - International Association of Ports and Harbors (IAPH)

Baltic Ports Organization
(51 member ports)

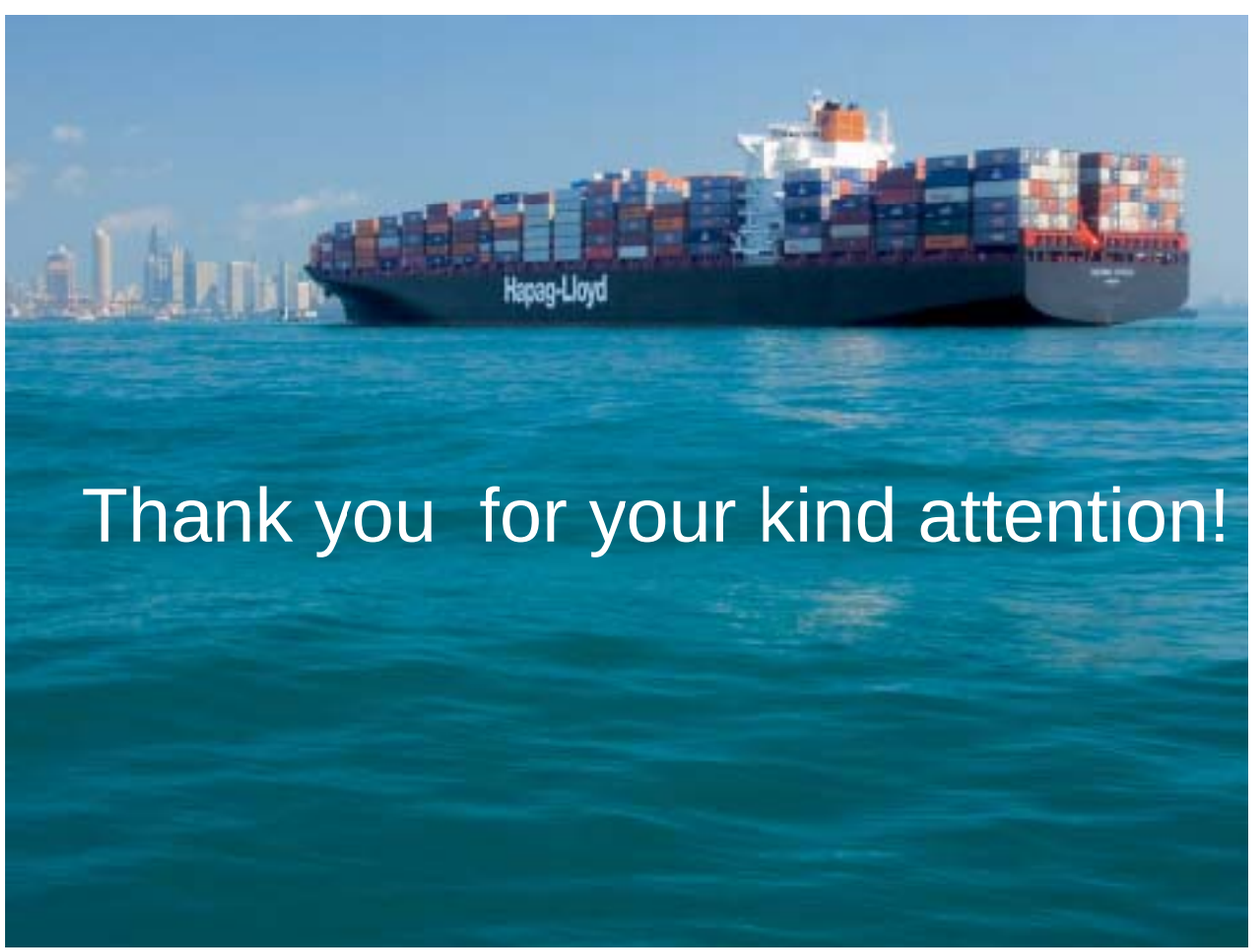
Main objectives:

- Improving competitiveness of maritime transport in the Baltic region by increasing efficiency of ports
- Marketing the Baltic region
- Improving infrastructure in ports and related transport modes
- Improving cooperation with port users and operators
- Applying new technology in port to improve performance
- Improve cost efficiency, etc

NE Asian Ports Organization (NEAPO)

(Open to further discussion)

- NEAPO's Mission Statement
- Which ports to include as member ports?
- Cooperation with other logistics service providers
- Governments' role
- Preparatory body
- Establishment procedures



Thank you for your kind attention!