NEAL-NET’s approach to facilitate logistics network in the sub-region

Seoul, Korea
October 2012
NEAL-NET Establishment
Importance of the Three Countries’ Trade

- 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

Unit: Million USD,
: IMF, JETRO

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

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 is 135%
Vigorous Needs of Logistics Service

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

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

Ref: Containerisation International Yearbook 2012
To Solve the Problem of International Logistics Information Sharing

- 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 are 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.

Visible

Consigner → Road Transport → Exp Customs → Exp Port → Marine Transport → Imp Port → Imp Customs → Distribution → Consignee

Invisible from Consigner and Consignee’s view
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 2\textsuperscript{nd} 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 3\textsuperscript{rd} 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 2\textsuperscript{nd} 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.
**Character**: A transnational, non-profit cooperative mechanism for logistics information interchange, sharing and technical cooperation

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

**Organization**: Constituted by the Joint Steering Committee, the Council, the Secretariat and the NEAL-NET members
• Dec 3\textsuperscript{rd} 2010, the 1\textsuperscript{st} Council Meeting of NEAL-NET was held in Hangzhou. Reviewed and discussed the Work Report and Work Plan.

• Apr 25\textsuperscript{th}-28\textsuperscript{th} 2011, The 1\textsuperscript{st} 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 19\textsuperscript{th}-22\textsuperscript{nd} 2011, The 2\textsuperscript{nd} 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 18\textsuperscript{th}-20\textsuperscript{th} 2011, the 3\textsuperscript{rd} 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.
• During the 2\textsuperscript{nd} 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 \textit{Declaration of the 2\textsuperscript{nd} 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 5\textsuperscript{th} NEAL-NET Technical Meeting was held in Jeju, Korea. User Management and Container Status Information Sharing issues were discussed.

• Jun 2012, The 6\textsuperscript{th} NEAL-NET Technical Meeting was held in Beijing, China. Container Status Information Sharing standard was drafted. User Management and port expansion issues were discussed.

• Sep 2012, The 1\textsuperscript{st} EU-Asia Cooperation Meeting and the 7\textsuperscript{th} NEAL-NET Technical Meeting was held in Hangzhou, China. Asia-EU logistics information sharing cooperation scheme was discussed. Working schedule and Unified User Management issues were finalized.
NEAL-NET Technical Framework
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.
Event based Data Sharing Model

- From Sep, 2010, under the leadership of MOT of China, Japan and Korea, NEAL-NET starts the research of port information sharing and finally defined dynamic vessel status and container status sharing standards.
- Container status tracking is a typical case of tracking business. More than 9 basic events was abstracted and also technical framework was designed.
  - ETA, ATA, Cy-Open, Cy-Cut, ATD are vessel related properties.
  - Unloading, Container departure, Container Entering, Loading are container properties.

Events

- ETA
- ATA
- Unloading
- Container Departure
- Cy-Open
- Container Entering
- Cy-Cut
- Loading
- ATD

Dynamic Vessel Status Sharing Interface by end of Dec, 2011

- Vessel Property
- Container Property

Container Status Sharing Interface by end of 2012

- Vessel Property
- Container Property
- Vessel Property
- Container Property
- Vessel Property
- Container Property
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

- Reduce logistics information sharing cost
- Timeliness data query
- Accuracy of data
- Security of data

Benefits
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 Development Status
NEAL-NET Expedites Port Service Coverage Extension

• 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
Domestic Ports Expansion Work Started

- 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

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

<table>
<thead>
<tr>
<th>No.</th>
<th>Port Name</th>
<th>Report work plan</th>
<th>Plan completion time (Dynamic Container Status)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yingkou Port</td>
<td>Reported</td>
<td>July, 2012</td>
</tr>
<tr>
<td>3</td>
<td>Yantai Port</td>
<td>Reported</td>
<td>August, 2012</td>
</tr>
<tr>
<td>4</td>
<td>Weihai Port</td>
<td>Reported</td>
<td>August, 2012</td>
</tr>
<tr>
<td>5</td>
<td>Qingdao Port</td>
<td>Reported</td>
<td>August, 2012</td>
</tr>
<tr>
<td>7</td>
<td>Tianjin Port</td>
<td>Reported</td>
<td>August, 2012</td>
</tr>
<tr>
<td>10</td>
<td>Ningbo Port</td>
<td>-</td>
<td>Already finished</td>
</tr>
<tr>
<td>11</td>
<td>Guangzhou Port</td>
<td>Reported</td>
<td>August, 2012</td>
</tr>
<tr>
<td>13</td>
<td>Shekou Port</td>
<td>Reported</td>
<td>August, 2012</td>
</tr>
<tr>
<td>14</td>
<td>Xiamen Port</td>
<td>Reported</td>
<td>August, 2012</td>
</tr>
</tbody>
</table>

Planned to provide service after link test by the end of 2012
Future Works
NEAL-NET Core Objective in 2012

- In order to finish container state information sharing pilot in 2012, we need to complete the following two aspects:
  - To define and get agreement on the standard of container state information sharing
  - Formulate a appropriate user registration and authentication mechanism for pilot project.
## International Cooperation

### EU

- Continue to perform Asia-EU logistics information sharing cooperation experts communication, it is proposed that the 2nd EU-Asia Logistics Information Sharing Cooperation Workshop to be led by European Union and to be held in the early of 2013 in Europe. The core of the workshop is to study the needs and areas of cooperation as well as the working mechanism in a much more detailed level.

### Singapore

- Singapore government delegation visited NEAL-NET China at April, 2012. Singapore delegation highly appraises the logistics information sharing framework of NEAL-NET, wish to join the cooperation mechanism.

### Other

- NEAL-NET is open system to share logistics information between countries. Your are kindly welcomed under NEAL-NET cooperation mechanism.
Thank You!

Northeast Asia Logistics Information Service Network