Introduction of Port Planning

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1. New challenges for Port Management

- A port is essentially a point where goods are transferred from one mode of transport to another. In an era of economic globalization ports are evolving rapidly from being traditional land/sea interfaces to providers of complete logistics networks.

- This means the ports had to face many challenges due to unpredictable environmental changes and trends in the shipping, port and logistics industries.
2.3.2. Port Planning

According to the Port and Harbor Law, port management bodies of major ports that have a strong connection to the national interest are required to formulate port plans and submit them to the Minister of Land, Infrastructure and Transport. The port plans establish policies for port planning, port capacities, the scale and layout of port facilities, and improvement and maintenance of the port environment. Port facilities are improved according to these port plans.
## Items and Details of Port Plans

<table>
<thead>
<tr>
<th>Plan Items</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. Policies of port planning</strong></td>
<td>Consolidation and overall establishment of policies for (1) positioning and functions of the port, (2) development and use of port facilities, (3) land use in ports, (4) development and preservation of the port environment, (5) maintaining the safety of the port, (6) conservation of areas adjacent to the port.</td>
</tr>
<tr>
<td><strong>II. Capacity of ports</strong></td>
<td>Determination of (1) the amount of cargo handled, (2) the number of passengers, and (3) other capacities of port in the target year of the port planning.</td>
</tr>
<tr>
<td><strong>III. The scale and layout of port facilities</strong> (1) Water area facilities (2) Outlying facilities (3) Berthing facilities (4) Port traffic facilities (5) Passenger facilities (6) Cargo handling and storage facilities</td>
<td>Determination of the scale and layout of facilities</td>
</tr>
<tr>
<td><strong>IV. Improvement and maintenance of the port environment</strong> (1) Waste disposal (2) Facilities for prevention of pollution to ports (3) Facilities for improvement of the port environment</td>
<td>Determination of the scale and layout of the related facilities, Determination of the type and amount of waste products</td>
</tr>
<tr>
<td><strong>V. Miscellaneous items</strong> (1) Preservation of land in and around the port (2) Land reclamation (3) Land use (4) Use of port facilities</td>
<td>(1) Type and layout of the related facilities (2) Scale and layout of land to be reclaimed (3) Divisions of land use (4) Distinction between facilities for public use and private use facilities</td>
</tr>
</tbody>
</table>
Port facility development projects must be consistent with national development plans and relevant local development plans. In general, development requires a substantial period of time and influences significant areas of the country. Regional transport networks and socioeconomic activities must, therefore, be taken into consideration when developing these facilities.

The plans drawn up by port management bodies must be in accord with the basic national policies for port development, “Basic Policies for the Development, Use and Maintenance of Ports, and the Improvement and Preservation of Major Navigation Channels.” In addition to items concerning the development of transport infrastructure, appropriate use and balanced development of national territory, other basic points related to maintaining links among ports that are closely connected in terms of economics have recently been added to the basic policies as guidelines.
The Port and Harbor Law sets forth the items listed on p. 7 as the functions and duties to be carried out by port management bodies.

2.4.5. Systematic Framework for Port Management and Administration

Ports are subject to a variety of activities, including maritime transport, shipping, and marine services. Beyond port management bodies, an interlocking network of various administrative organizations manages port-related social and economic activities. At present, port users and administrators (port management bodies and port management and administration organizations) are being urged to electronically exchange information on administrative procedures. (For details on port information system, see the item on the “Port Information System: Port and Harbor Electronic Data Interchange (EDI)”.)
<table>
<thead>
<tr>
<th>Activity</th>
<th>Responsible government agency</th>
<th>Laws and regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navigation safety and systematic maintenance within port facilities</td>
<td>Port master (Ministry of Land, Infrastructure and Transport, Coast Guard)</td>
<td>Harbor Regulation Law</td>
</tr>
<tr>
<td>Regulation of port transportation, supervision (sales registration, fee forwarding, etc.)</td>
<td>District Transport Bureau (Ministry of Land, Infrastructure and Transport)</td>
<td>Port Transportation Business Law</td>
</tr>
<tr>
<td>Supervision of coastal warehouse industry</td>
<td></td>
<td>Warehousing Law</td>
</tr>
<tr>
<td>Supervision of maritime service industry</td>
<td></td>
<td>Marine Transportation Law</td>
</tr>
<tr>
<td>Licensing and supervision of the piloting profession</td>
<td></td>
<td>Pilotage Law</td>
</tr>
<tr>
<td>Regulation of duties, tonnage taxes, special tonnage taxes*, other assessments, levies, and bonded areas</td>
<td>Customs (Ministry of Finance)</td>
<td>Customs Law</td>
</tr>
<tr>
<td>Approval of imported and exported freight</td>
<td>Regional Bureau of Trade and Industry (Ministry of Economy, Trade and Industry)</td>
<td>Foreign Exchange and Foreign Trade Control Law</td>
</tr>
<tr>
<td>Inspection and quarantine of imported and exported animals</td>
<td>Animal Quarantine Office (Ministry of Agriculture, Forestry, and Fisheries)</td>
<td>Livestock infectious Diseases Prevention Law</td>
</tr>
<tr>
<td>Inspection and control of imported and exported plants</td>
<td>Plant Quarantine Office (Ministry of Agriculture, Forestry, and Fisheries)</td>
<td>Plant Quarantine Law</td>
</tr>
<tr>
<td>Control of Immigration and Emigration</td>
<td>Immigration Office (Ministry of Justice)</td>
<td>Emigration and Imigration Control Ordinance</td>
</tr>
<tr>
<td>Port quarantine of seamen and passengers</td>
<td>Quarantine Office (Ministry of Health, Labour and Welfare)</td>
<td>Quarantine Law</td>
</tr>
</tbody>
</table>
Port functions

Outline of port facilities and procedures for entering and leaving

Government officials and others concerned with port use

For Exports
- Inspectors and quarantine officers
- Line handling work
- Shipping agency
- CYCPS
- Customs broker
- Package
- Bonded area shed
- Barge
- Onshore cargo handling
- Range of operations of marine freight handlers

For Imports
- Enumerators and quantifiers
- Line handling work
- Landing anchorage
- Barge
- Onshore cargo handling work
- Range of operations of marine freight handlers

Quarantine
(Ministry of Health, Labour and Welfare)

Immigration
branch office or
agency
(Ministry of Justice)

Ports and Harbours
Bureau
(local public entity)

Harbor master
(Coast Guard)

Plant and animal
quarantine stations
(Ministry of Agriculture, Forestry,
and Fisheries)

District
Transport Bureau etc.
(MOL)

Customs
(Ministry of Finance)
Main port facility usage fees (in the case of Yokohama)

Charges for use of wharves,
Charges for use of mooring buoys,
Charges for use of mooring facilities for small boats,
Charges for use of shed & warehouse,
Rental charges for use of land,
Charges for use of area for cargo handling,
Charges for use of landing platforms,
Charges for use of cranes,
Charges for use of gantry cranes

Port container cargo handling
(Port of Yokohama Daikoku)
The development of ports has proceeded systematically according to five-year investment plan for ports and harbors formulated along the lines of each national economic plan. Decisions on the scale of investment during the five-year period of these plans follow Cabinet meetings on the subject. Based on the port development budgets submitted by port management bodies, the Ministry of Land, Infrastructure and Transport compiles a national level budget for the development of ports and harbors to ensure the systematic implementation of each port’s development plan.

In 2003, the Priority Plan for Social Infrastructure Development was formulated, replacing the former five-year investment plan for ports and harbors.
National government

Basic policies on port and harbor development, use and preservation, as well as waterways to be developed and preserved

Port management bodies

Port and harbor plans

National government

Priority plan for Social Infrastructure development

National government, port management bodies

Single fiscal year port and harbor project plans
Promotion of the super hub port project

- Japan's super hub port project is an effort aimed at reducing port costs by 30% and shortening lead time (the time between when a ship enters port and the offloading of freight becomes possible) from three or four days today to approximately one day, by efficiently operating large-scale container terminals having three or more berths (designated international container wharf), a feature unprecedented in Japan, on an integrated basis under a single operator, in order to achieve a cost and service level that surpasses Asia's other main ports.
Based on a partial revision of the Port and Harbor Law in July 2005, Japan has now established a system for long-term leasing of berths and terminal yards and a system of interest-free loans for construction of freight loading facilities from Fiscal 2005 for the private businesses (authorized operators) that will manage the designated international container wharves, based on the designation of Keihin Port, the Port of Nagoya and the Port of Yokkaichi, and the Port of Osaka and the Port of Kobe as specific designated important ports (super hub ports), with the goal of promoting the projects.

The bureau will continue this effort in the future with steps to upgrade of functions of all super hub ports through measures such promotion of terminal public corporation reforms and construction of multimodal logistics networks including coastal shipping, roads and railways.
Promotion of super hub port projects

Objective: Realization of cost and service levels that surpass those at main ports in other Asian nations

- Reduce port costs by 30% compared to rival Port of Busan and Port of Kaohsiung
- Shorten the lead time from three or four days currently to one day, rivaling Port of Singapore

<< Super hub port investigation process >>

Super Hub Port Selection Committee
⇒ Decides designation criteria

Selection of super hub port candidates

Fiscal 2004
- Super hub port designation (July 23)
  (Designation of Keihin Port, Ise Bay (Port of Nagoya and Port of Yokkaichi), and Port of Kobe)
- Implementation of social experiment related to integration, enlargement and computerization and IT upgrades of terminal systems

Fiscal 2005
- Next-generation advanced standards container terminal formation support project

<< Measures to develop super hub ports under cooperation with ports over a wide area >>

- Promote logistics industry consolidation
- Establish terminal operators
- Reduce costs by means such as enlargement of terminal size, "publicly built and privately operated" formula, etc.
- (1) Integration and computerization of terminal management systems
- (2) Support for increase in vessel size
Container cargo handling (Port of Yokohama)
Energy supply and reserve base (Port of Hami)
(Courtesy of Shibishi Petroleum Storage Co., Ltd.)

Example of waterfront
(Port of Osaka Tenpozan Harbor Village)

Example of waterfront
(Port of Hakata Marizon)

Waterfront industrial area landscape
(Port of Yokkaichi Petro chemical Industrial Complex)
The Port and Harbor Law outlines the following major roles for the national government (Ministry of Land, Infrastructure and Transport) and the port management bodies:

**Central Government’s Role in Port Management**
- Policy formulation for the development and administration of nationwide ports and harbors
- Establishment of necessary laws and regulations
- Providing advice and guidance on port administration and operation to port management bodies
- Authorizing development plans for major ports
- Financial assistance for port management bodies in relation to port construction projects
- Implementation of port construction projects (projects under the direct control of the central government)
- Improvement and maintenance of shipping channels outside the port area
- Establishment of technological standards for planning, design, and construction of ports and harbors
- Surveys and research concerning port technology
Major Roles of Port Management Bodies

- Formulation of port development/management plan
- Construction and maintenance of port facilities
- Permission for and restrictions on facility use in port management districts (marine district)
- Leasing and management of port facilities
- Setting and collecting fees for use of port facilities
- Establishing conditions for providing port services
- Land reclamation in harbor districts
- Environmental protection in ports and harbors
- Statistics collection for ports and harbors
- Marketing and promotion of ports and harbors
2) Introduction of the New System

In order to deal with the problems described above, the “new system” was introduced in Port of Tokyo, Yokohama, Nagoya, Osaka, and Kobe. Central to the system were the ideas of (1) public development of quay walls, and (2) promotion of shared and intensive usage through common terminal operation. These measures were meant to lower costs and increase efficiency.

<table>
<thead>
<tr>
<th>Type of use</th>
<th>Public system</th>
<th>Terminal corporation system</th>
<th>New system</th>
</tr>
</thead>
<tbody>
<tr>
<td>User fees</td>
<td>Public use</td>
<td>Exclusive use</td>
<td>Common use, preferential use</td>
</tr>
<tr>
<td>Efficiency of use</td>
<td>Relatively inexpensive</td>
<td>Relatively expensive</td>
<td>Relatively inexpensive</td>
</tr>
<tr>
<td>Improvement of quay walls</td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Improvement of inland sites</td>
<td>Public (national government, port management bodies)</td>
<td>Terminal corporation (leases by ship owners)</td>
<td>Public (national government, port management bodies)</td>
</tr>
<tr>
<td>Onshore structure and facility development</td>
<td>Port management bodies</td>
<td>Terminal corporation (leases by ship owners)</td>
<td>Terminal corporation (the national government and the port management bodies supply partial support through interest-free loans)</td>
</tr>
</tbody>
</table>
| Operation | Port operators (unspecified) | Port operators (connected with the ship owners) | • Flexible, unified management by a terminal corporation, including the quay walls and other facilities.  
• Unified management of common terminal operators, employing a high-intensity system and coordinated operation with the inland sites; common use and high-intensity use by multiple marine and harbor transport companies |
Container Terminal Layout

Container wharf (Port of Hakata)
### Classification of Port Management and Operation

<table>
<thead>
<tr>
<th>Patterns</th>
<th>Service Port</th>
<th>Landlord Port</th>
<th>Private Initiative Port</th>
<th>Privately-owned Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making Port Development Plans</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>• or •</td>
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<tr>
<td>Construction</td>
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<tr>
<td>Channel/Anchorage</td>
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<tr>
<td>Breakwater</td>
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<td>•</td>
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<tr>
<td>Berthing Facilities</td>
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<tr>
<td>Yard area</td>
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<tr>
<td>Transit shed</td>
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<td>•</td>
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<tr>
<td>Cargo handling Equipment</td>
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</tr>
<tr>
<td>Ownership</td>
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<td></td>
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<tr>
<td>Land</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>(Lease)</td>
</tr>
<tr>
<td>Terminal facilities</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Terminal Operation</td>
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<tr>
<td>Tug and Pilot</td>
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</table>

**Remarks**

<table>
<thead>
<tr>
<th>Service Contract</th>
<th>With Equipment</th>
<th>Without Equipment</th>
<th>Concession/BOT</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Transferred to Public Sector after contract period</em></td>
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</tr>
</tbody>
</table>

**Notes:**  •:Public Sector,  ●:Private Sector
2.6.1. “Super-hub Port” Initiative

In the wake of soaring container handling volumes in other East Asian ports, Japanese ports have been moving down on the world ranking in the last decade. The lowering in the ranking is unavoidable considering the relatively moderate cargo growth in Japan, but falling competitiveness of Japanese ports can be a serious concern for Japanese shippers. There are growing concerns that the decrease in the frequency of trunk line services to Japanese ports might undercut the competitiveness of Japanese economy and industry.

To maintain and recover trunk line container services to major Japanese container ports, MLIT-Japan has launched “Super-hub Port Initiative” aiming at strengthening international competitiveness of major Japanese ports comparable with those of other Asian ports. MLIT set the target that “Super-hub Port” should realize, 1) cutting port cost more than 30% and 2) shortening container discharging lead time from 3 - 4 days to less than 1 day. To achieve such targets, following measures are to be taken.
1) Formulation of “Mega - Container Terminals”

To reduce handling costs through economies of scale, a “Super-hub Port” should have “Mega Container Terminals” to enable integrated and flexible terminal operation.

2) Encouraging consolidation of terminal operators

Encouraging private operators to participate in the terminal business through financing supports and long-term lease arrangements of public assets (public wharf)

2) Introduction of cutting-edge IT

Introduction of cutting-edge IT system and fully automated cargo handling equipment to enable 24 hours operation

3) Improve connection with domestic feeder services

Promote the development of domestic feeder services to increase the domestic feeder cargo
To facilitate the above measures, MLIT submitted a bill to the Diet to revise the Ports and Harbours Law and it was enacted on May 2005. In July 2005, with the enforcement of the revision, Minister for Land, Infrastructure and Transport designated three ports as “Super-hub Ports.” Upon the consolidation of operators, each port management body is expected to approve the operators of Mega Container Terminal.

1) Keihin Port (Alliances of Port of Tokyo and Port of Yokohama)

2) Alliances of Port of Nagoya and Port of Yokkaichi

3) Hanshin Port (Alliances of Port of Kobe and Port of Osaka)
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2) Alliances of Port of Nagoya and Port of Yokkaichi
3) Hanshin Port (Alliances of Port of Kobe and Port of Osaka)
Urban Redevelopment/Renaissance Headquarters

Current Terminal

Merging terminal operation system

-1.4~1.5m

330~400m

Mega-Terminal

Subsidy (1/3)

Common use depot

Distributions

Non stop gate

Over ~15m

More than 500 m

More than 1,300 m

Soft loan

(80% interest free)

Collaborations with port community

Smooth connection with coastal shipping

Direct construction

24-hours full open utilities (CIQ inspections and multi-purpose space)

Automated yard facilities

Deep water quay
2.6.2. Port Security


In April 2004, Japanese government set a new legislation and regulations to comply with the amended SOLAS/ISPS. For the owners of ships on international voyages and international port facilities, it was obliged to keep on implementing security measures in terms of hardware as well as software. The implementation of security measures is considered to be effective to prevent from international terrorism and to enhance reliability of the international maritime transport network.
Security Measures for International Port Facilities

- **International port facilities**
  - Control entry/exit to/from the port facility
  - Carry out surveillance inside and around the port facility
  - Install security lighting, surveillance cameras, etc.

- **Designate a port facility security officer** (responsible for implementing the port facility security plan)
  - Control handling of cargo
  - Establish a restricted area (to prevent unauthorized intrusion)
  - Establish a restricted area (erect a fence to prevent unauthorized intrusion)

- **Develop a port facility security plan**
  - Government approves the security plan
  - Communicate to IMO a list of PFSPs.
Objective of the training course – establish PDCA cycle –

To acquire ability to maintain and enhance port security by learning skill and knowledge to establish PDCA process on port security. Special emphasis are placed to establish 'CHECK' process, such as inspection & audit, drills and exercises.

The government conducts a port facility security assessment (Convention, Chapter A15)
The government develops guidelines for port facility security plans (Convention, B16.1-2)

The government approves the port facility security plan (Convention, A15.2)
It reports port facilities whose plans have been approved to the IMO (by Jul. 2004, Chapter X1-2, Provision 13)
2.6.3. **Single Window System**

Trade and Port related Procedures in Japan had been complicated in the past. They required various kinds of papers to be submitted to many different public offices. It was necessary to simplify the procedure to facilitate international logistics and to improve the international competitiveness of Japan.

In 1999, the “Port and Harbor Electronic Data Interchange (EDI)” system was introduced. Its aim was to encourage port management bodies and port masters to exchange data related to applications, reports and other administrative procedures electronically. Port and harbor employees were able to submit applications and reports online, as well as by UN/EDIFACT messages.