

# Multiservice Infrastructure

## Privatizing Port Services

Ports have become increasingly capital intensive. Economies of scale have led to larger, more specialized ships. And competition between ports has started to grow. As a result, governments are reorganizing the way ports are run and permitting more private ownership and service delivery. Because ports provide multiple services, if governments are to design an efficient legal and regulatory framework for private participation it is important to study all these activities to evaluate the best approach. Moreover, because these activities must take place in a small space, it is important to study how they are best coordinated.

### More competition

In recent decades there have been profound changes in maritime transport. Ports, once labor-intensive, have become more capital-intensive, making much port labor redundant. The development of containerized transport has dramatically reduced the cost of cargo handling, but it has also required much investment in equipment (gantry cranes, specialized terminals, improved pavement, and so on). The economies of scale obtained by the transport of large quantities of containers and bulk cargoes have led to the building of larger and more specialized ships that require substantial port investments in new infrastructure and equipment. Moreover, the development of integrated and intermodal transport chains has reduced transport costs so much that it is often preferable for a shipper to use a distant port instead of a closer one, if the distant port has better facilities and con-

nections. Therefore, modern ports must be extremely competitive to be able to offer optimal combinations of time and price for those firms demanding their services.

Somewhat less widely understood is the potential for intraport competition. Seaports offer many services to ships. The potential for competition in providing these services depends largely on the assets required to provide them, the space available in the port, and the volume of traffic. A defining physical characteristic of ports is that space is limited. Partly this is because many of the activities must take place around the ship. But it is also because port infrastructure is expensive to build, and much of it can only be expanded in discrete units.

### Multiservice operations

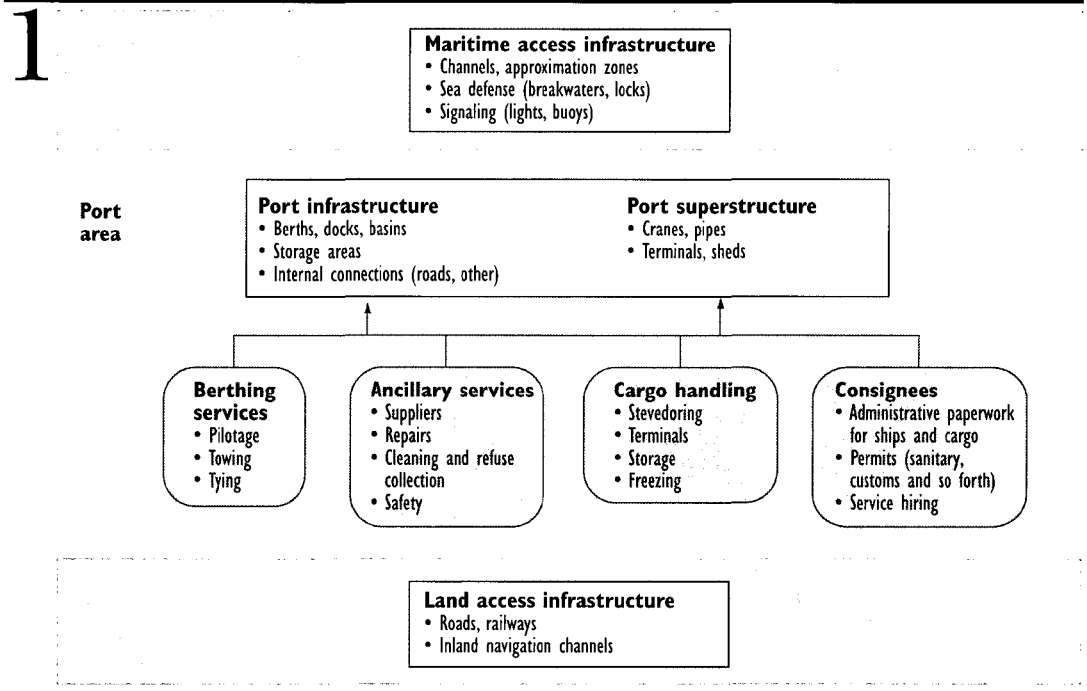
For the purposes of analysis, it is useful to divide port activities into infrastructure, services

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Figure 1 Port activities



Source: Estache and de Rus 2000.

provided using the infrastructure, and coordination between the activities at the port.

**Many kinds of infrastructure**

A port obviously needs good access by sea (channels, locks, aids to navigation, and so on) and by land (roads, railways, and canals). The port also has internal infrastructure, such as docks and storage yards, and internal superstructure. The superstructure can be classified into fixed assets built on the infrastructure, such as sheds, fuel tanks, and office buildings, and fixed and mobile equipment such as cranes and van carriers.

In general, the port authority is responsible for the port, and the state or municipal government is responsible for the land access infrastructure. They divide responsibility for the maritime access infrastructure, with the port authority responsible for breakwaters, lights, and buoys and the government responsible for the rest.

**Many kinds of services**

Many services are provided by different operators. First, there is a group of services related to berthing, which include pilotage, towing and tying. They can be provided by the port authority or private firms. Pilotage covers the operations required

for a ship to enter and exit a port safely. In some ports pilots are public employees, and in others they are private agents licensed by the port authority. Towing is the operation of maneuvering a ship using tugs. Like pilotage, it can be provided by private firms or operators hired by the port authority.

Cargo handling includes all activities related to the movement of cargo to and from ships and across port facilities. The historic distinction between stevedoring—moving goods within a ship—and loading—moving goods onto a ship from the quay—has been eroded by modern cargo handling techniques like containerization. Because the technique used depends on the type of cargo, it is efficient to use specialized equipment. This has led to the formation of terminals that specialize in particular cargoes. Because cargo handling charges account for between 70 percent and 90 percent of the cost of moving goods through a port, regulators concerned with cost-efficiency of the port must pay cargo handling particular attention.

A further range of services is provided by agents who handle the documentation for port users—the health clearances, import and export requirements, and customs duties. These agents are known as consignees, and are hired by shipping companies to arrange in advance the administra-

tion and all matters related to the use of port facilities by a ship. A modern port must minimize red tape for port users. Delays cost money.

Finally, there are ancillary services, including supplies to ships such as fuel and water, cleaning, and refuse collection.

### Coordination

With many activities being performed in a limited space, there is a need for a coordinator responsible for the proper use of common facilities, for safety, and for the design of the port. In most ports, this is the role of the port authority. It is generally a public institution, with representation of local interests, but in some ports the authority is purely private.

The common forms of organization are known as landlord, tool, and services ports.

- *Landlord port.* The port authority owns and manages the port infrastructure. Private firms provide all other services and own the port superstructure.
- *Tool port.* The port authority owns both infrastructure and superstructure. Private firms provide services by renting port assets, through concessions or licenses.
- *Services port.* The port authority is responsible for the port as a whole, owning the infrastructure and superstructure and hiring employees to provide services.

In landlord and tool ports, the port authority is usually public and the port operators are private firms. Services ports are more likely to be privately owned, with one private firm operating the port as a single unit. The role of port authorities should be confined to the provision of infrastructure and the coordination of port services. However, in many countries where there is no regulatory institution for seaports, port authorities perform many other tasks, such as investment planning and financing, or regulation of the tariffs that private operators charge to port users.

### Privatization options

The options for privatizing port services depend on the size of the port and the services involved, and include:

- Full privatization. All assets and liabilities are transferred to the private sector.
- Build, Operate, and Own. Parts of the port are sold to private operators to be developed.

- Build (or Rehabilitate), Operate, and Transfer. Private operators build or rehabilitate facilities, which are eventually transferred to public ownership. Also known as a concession.
- Joint ventures. Operators create a new independent company. This type of agreement arises when two or more parties with common interests join forces (for example, one firm supplies technology and know-how, while another supplies market knowledge).
- Leasing. The port authority leases port assets to private operators for a given period. In contrast with a concession, the private operators do not usually make investments, and therefore they only assume commercial risks.
- Licensing. Private operators provide services requiring basic equipment, which they own. The port authority owns the port infrastructure and superstructure and charges the private operators for their use. Stevedoring companies, pilots, tug operators or consignees can work under this type of agreement.
- Management contract. The port authority remains the owner of the port, but the port is run by a private firm which can provide a more commercial approach to operations. Both investment and commercial risks are faced by the public sector, since managers do not invest their own capital in the port.

### Shared or exclusive use

A basic consideration in choosing the best form of privatization is whether the service to be privatized requires the exclusive use of the port's fixed assets.

Activities in which the fixed assets can be shared include services such as pilotage, towing, consignee services and ancillary services to ships and crew. Under a system of licenses, several operators can be authorized to provide these services. The prices they charge and the quality of their services can be regulated. In cases where competition is possible, for example between consignees or pilots, strict regulation of prices would not be necessary unless collusive practices were detected. In ports where space limits the number of operators, prices and conditions of service need to be regulated to prevent market domination by a few firms who may try to exploit their position to extract rents from port users.

Because space is so scarce in ports, exclusivity in the use of some fixed assets may be necessary. Such

**Box** Types of competition at different volumes of container traffic

Type of competition	Level of traffic (TEUs)
Intra-terminal	Above 30,000 per year
Inter-terminal	Above 100,000 per year
Inter-port	Above 300,000 per year

Note: TEU is a Twenty Foot Equivalent Unit. This is a unit of measurement equivalent to one 20-foot shipping container.  
Source: Kent and Hochstein (1998).

assets and associated services include terminals for cargo handling, storage areas, repairing docks and fuel suppliers. It is more complicated to introduce private participation in these services, since operators need to use assets that are considered to be optimally owned by the port authority. Therefore, concession contracts need to be written carefully in order to reconcile private operators' interests with port authorities' objectives. At the same time, contracts must include incentives for private operators to maintain or enhance assets as required.

The number of operators for these services is by definition extremely limited, although it depends on port size. Similarly, the need for regulation of charges and quality depends on the type of port and how many alternative ports are nearby. In a port in a highly competitive environment, the regulator need not be too concerned about overcharging, because operators that overcharge risk losing customers.

**Rule of thumb for competition**

The privatization strategy should maximize the potential for competition. There is no universal rule for the degree of competition and regulation desirable in a port with a particular volume of traffic, but for container ports there is acceptance of some thresholds (box 1). A port handling fewer than 30,000 TEUs a year is too small to have several terminals and operators. The best solution is to have a single operator and to regulate its charges.

In a port handling between 30,000 and 100,000 TEUs a year, it is feasible to have several operators, possibly sharing a single terminal. There would be intra-terminal competition, with stevedoring companies competing to provide cargo handling services.

A port handling more than 100,000 TEUs a year is big enough to have a number of terminals operated by several companies that can use separate

berths and can manage them better. The terminals compete with each other. When a company serves all ships using a given berth, the port authority can make it responsible for collecting port tariffs—charges for the use of the port—as well as the operator's own charges. At this volume of traffic, it is also possible to provide incentives for private operators to finance projects for infrastructure enhancement or construction.

Finally, in a region where container traffic is above 300,000 TEUs a year, the market size allows for the existence of several ports that can compete for traffic. Such inter-port competition again reduces the need for control over private operators' prices. However, even in this optimal case, attention is still needed for the proper drafting of concession contracts, since private operators must be compelled to fulfill their obligations not only on service conditions and charges, but also on equipment maintenance, safety, quality of services, and all other matters which are costly for the concessionaire, and could be underprovided.

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*This Note is based on a chapter in Estache and de Rus 2000.*

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