

Public Private Partnership for Efficient Port Operation: A Proposal for Chittagong Port Authority

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Abstract

Chittagong Port is the principal gateway of international trade and commerce in Bangladesh. The maritime dependency factor of Bangladesh is 30%, of which 89% of the trade in volume terms is handled by Chittagong Port alone. Also the port contributes 35-40% of the government budgetary revenue through the earnings of export-import taxes, excise duties, VAT etc. About 7,000 employees are employed by Chittagong Port Authority (CPA), which is addressing the problem of unemployment to some extent. But the CPA is unable to provide prompt and efficient port operation as compared to private sector port operation of other countries due to hierarchical, bureaucratic and time-consuming decision making processes. In the recent past, port operation through Public Private Partnership (PPP) has grown. Computerized Container Terminal Management System (CTMS) and Management Information System (MIS) must be introduced to avoid crime, corruption, and costs associated with documentation processes.

Introduction

Ports play a vital role in trade and economic development. They must have adequate facilities such as multimodal transportation systems, adequate infrastructure, superstructure and modern equipment which are essential for efficient port operations. As an economic tool, a port is a gateway which impacts security, external trade and general economic development. As a logistics platform, the port is a community of professions that serves cargo and ships. The transfer of goods from sea and vice-versa is a good opportunity to add value to the cargo, distribution centre, brokerage, repackaging, and creation of new activities linked to shipping and foreign trade. Unfortunately, the port and transport sector of Bangladesh have not developed as desired to cope with trade and economic development needs. Today, Bangladesh needs a modern, efficient port, which can make important economic contributions to the country (Hossain 2004). Chittagong Port is the principal port of Bangladesh. The maritime sector handles about 89% of trade in volume terms. The maritime dependency of the country on average (2000 to 2004) is 30.8%. Since the Bangladesh economy is not a mature economy, being mostly based on agriculture, the degree of induced impact may be more than 50% (Halima, 2006).

Present Status of Chittagong Port

During 2005-06 Chittagong Port handled 30

million metric tons of cargo including 8,27,174 twenty feet equivalent units (TEUs) of containers, with growth expected to continue. Despite many constraints, the Chittagong Port Authority (CPA) is handling about 92% of the total maritime trade of the country. The rate of GDP growth of the Bangladesh economy is around 6-7%. But the container growth rate at CPA is about 14%, which is double the rate of GDP. Thus the contribution of CPA to the national economy is substantial (Chittagong Port: an Overview, 2006).

According to Oram and Baker (1971), "No single cause directly affects the cost of living of a maritime country than the speed with which ships turn-around in her ports." But the main efficiency indicator, average turn-around time of ships, is 5.09 in Chittagong Port which is 5 times higher than the Singapore Port and Colombo Port, and 2.5 times higher than Bangkok Port and Jawaharlal Port (Maksuda Lillah 2007). "Ship turn-around time is an excellent indicator of the speed of services being provided to ship operators; it is a very important element in maritime transport costs" (Roach 1982). Waiting time and service time constitute the turn-around time: "A 15% reduction in service time results in a 45% reduction in waiting time and 28% of turn-around time" (Francou 2002).

The CPA is a public enterprise under the Ministry of Shipping, Government of the People's Republic of Bangladesh, and is tied up with a multitude of laws and decrees issued by

various Ministries. This hinders prompt and efficient port operation, as compared to the private sector port operation of other countries, due to hierarchic, bureaucratic and time-consuming decision-making processes. The port activities should have a dominant private sector character, with financial and operational independence from the government, so that it can operate under the framework of a market-oriented economy. In the recent past, port operation through Public Private Partnership (PPP) has improved. Different countries are reviewing their seaport policy, opting to use the Land Lord model for seaport management with a private- public participation formula in investments. In the Land Lord concept, the port authority owns the basic infrastructure only (for example, land, access and protection assets) and leases it out to operators, chiefly on a long-term concession basis, retaining all regulatory functions.

The merits of such a model are small investment required from the government, efficiency and low price (determined through competition); however, the demerits are exclusive use and discriminatory treatment. The best examples of this type of arrangement is seen in the European major ports (namely Rotterdam, Hamburg and Antwerp), US major ports (Los Angeles, Long Beach, New York and New Jersey), Kelang (Malaysia) and Laem Changbang (Thailand). Now-a-days ports are becoming more competitive and are trying to improve efficiency, reduce cargo-handling cost and integrate port services with other components of the global distribution network. To achieve this, new ports are coming into being in the private sector and the existing public ports are reforming themselves by restructuring their existing facilities and by involving more of the private sector. There are many convincing reasons for such restructuring. To reform the existing port facilities in the public sector by involving private sector participation, 'private-public participation' has become popular. Privatization of port facilities in a planned and systematic way for efficient operation cannot be overlooked by Bangladesh since increased globalization needs efficient port services and facilities. Most probably Bangladesh is also going to adopt the Land Lord model concept because IIFC has suggested building the New Mooring Container Terminal infrastructure of Chittagong Port on SOT (Supply, Operate and Transfer) basis (minutes of PSIC, 2007). A new dimension of port operation is seemingly opening up in

Bangladesh.

Performance of Chittagong Port

The productivity of any system is viewed as its output in relation to inputs and is a measure of efficiency in the utilization of resources. Efficiency is one of the three basic output dimensions of organizational performance; i.e., performance depends on efficiency, effectiveness and participants' satisfaction (Meletiou 1998). The growth rate of container and cargo handling at the port is increasing in spite of the political unrest in the country. A report indicated that the rate at which containers are being received from ships is much higher than the delivery from the port, resulting in growing congestion (Minutes of PSIC 2007).

Also, the sudden increase in the number of feeder vessels from 28 to 53 (99%) in 2006 has created vessel congestion in CPA, which is inconsistent with the container growth (12%). The existing equipment of CPA cannot cope with the ever-increasing number of containers (See Table 1) coming into the port, resulting in overstressed equipment that frequently break down.

It may also be noted that all the development expenditures are met from its revenue surplus and CPA contributes to Value Added Tax (VAT) which is shown in Table 2.

The average turn-around time at CPA is 6.47 days which is very high and equipment availability is very low by any standard. That is, about half of the time equipment is not available when required which has consequences for gang productivity as well as throughput. The average container dwell time in the Port is 15-20 days, whereas in neighboring countries it is less than 6-7 days. The dwell time could be reduced substantially if the importers take delivery of their containers within the 4 days free time.

A study by Belayet (2001) identifies five important factors that are responsible for the poor performance of the port. They are (i) Lack of developed inland transport system and logistics (ii) Complex custom and port clearance procedure (iii) Ministry's control and interference (iv) Bureaucratic decision-making process at the port (v) Role of Dockworkers Management Board (DWMB). Frederick (2001) also indicated that the Chittagong Port continues to employ a large labor force, which is both cost

Table-1 Cargo, Container and Vessel handled during last ten years

Year	Cargo (Ton)	General Vessel (number)	Container (TEU)*
2000	1,60,23,109	1462	4,56,007
2001	1,76,18,540	1631	4,86,289
2002	1,91,60,189	1602	5,26,353
2003	2,14,41,889	1720	6,24,560
2004	2,18,72,432	1764	6,88,771
2005	2,58,84,891	1892	7,83,353
2006	2,70,64,632	1957	8,76,186
2007(jan-jun)	1,33,86,502	961	4,61,404

Source: Chittagong Port: An Overview

*TEUs = Twenty Feet Equivalent Units

Table -2 Value Added Tax and Annual Expenditure of CPA

Year	VAT (Crore TK)	ADP Expenditure (in Crore Taka)	Foreign Currency Earned (in crore taka)	Total revenue earning by CPA (in crore taka)	% of Total earning
1999-00	24.00	1.66			
2000-01	48.00	60.18	219.42	477.00	46%
2001-02	55.00	19.27	260.37	531.37	49%
2002-03	53.00	30.72	260.00	530.66	49%
2003-04	55.00	62.44	256.38	557.36	46%
2004-05	72.00	147.70	311.89	649.78	48%
2005-06	105.00				

Source: Halima (2006)

Table 3- Operational Indicators

Indicators	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2007(Jan-Jun)
Turn around time of Vessels (days)	4.69	7.11	6.49	5.90	6.15	4.56	4.30	3.99	4.05	7.10	6.29
Equipment availability (%)	50.04	49.97	52.72	48.87	45.24	59.26	66.08	68.98	66.76	49.94	
Berth occupancy (%)	83.68	86.79	86.76	86.95	87.30	63.51	67.93	71.76	68.23	69.38	
W ratio%			74	55	62	44	43	32			

Source: Halima (2002)

CPA: an Overview, Different Years

effective and redundant. In 2004, the number of registered dock workers was 6,000 and belonged to the various registered trade unions under the DWMB. To improve the performance of the labor force, the Chittagong Port Authority recently abolished the DWMB.

PPP in Port Operation

The literature on public and private partnership (PPP) has increased substantially (Mangematin 2004). PPPs have proved particularly appealing to policymakers (Chataway and Smith 2006). In the literature of institutional economics, public-private partnerships are viewed as a government strategy designed to minimize transaction costs: the costs associated with forming, coordination, enforcing and sustaining contractual relationships between actors engaged in the production of goods or services (Williamson 1975). In particular, private sector participation can contribute to achieving the following objectives of the port operation as mentioned in an ADB (2000) report.

- provide services which are efficient and cost effective from the port users' perspective.
- respond to changes in cargo-handling technologies
- respond to the changing requirements of the port users.
- provide choice of services and foster competition
- make timely capital investment to improve efficiency and expand capacity.
- generate funds needed to finance investments.
- enforce labor discipline in the face of strong trade unions.

In general, ports and terminals today are trying to:

- Improve port efficiency
- Lower cargo handling cost and
- Integrate port services with other components of the global distribution network.

The privatization of port facilities has led to good results. The term 'privatization' is used in a strict sense: that is "the transfer of ownership of assets from the public to private sector". The private sector is noted for better investment capabilities, efficient management, and, most of all, its close connections with the port service-receivers, namely the shipping lines. As a public agency, inefficiency of CPA remains a key-barriers to imports into and exports from the

country. It is important that co-existence of public-private cooperation based on different formulas of ownership and management of assets be adopted, reflecting the PPP paradigm.

One should also distinguish between port assets and their operation. Normally, if the port authority owns the assets which are used by the private sector, keeping the regulatory control with the ports authority, the situation will be conducive to cost-effective use of the assets to provide efficient port services. Many public sector ports are still continuing to float tenders for private partnership in various ports and terminals. This has resulted in an increase in the trend of public-private participation (PPP) in port operations. According to Lorimer (2000), nearly all general cargo handling capacity has been privatized, (i.e., the ship-shore cycle is in the hands of private companies). The most common structure of ports in developing countries like India, Argentina, Chile, Brazil, Egypt and Sri Lanka is as follows (Rose 2000):

- State involvement
 - Regulatory role
 - Land Lord role (infrastructure, channels, safety and control of competition and port policy)
- Private Participation
 - through concession/BOT.

Recently, the President of Chittagong Chamber of Commerce and Industries (CCC&I) emphasized the PPP model for port operation saying, that it would be the most suitable model for developing countries where the interest of all concerned could be protected (Minutes, 22/1/07).

Scope of Private Sector Participation in Chittagong Port:

As a step towards securing private participation, clear and transparent policy guidelines must be adopted for the ports in Bangladesh by establishing new physical port/ terminal structures on Build, Operate and Own (BOO), Build, Operate and Turnover (BOT), or Supply, Operate and Transfer (SOT) model as is widely practiced in most Asian countries. The following areas have been initially identified for private participation:

- Leasing out existing assets of the port.
- Financing, construction, creation and operation of additional or new assets, such as container terminals, berths, warehouses, container freight station, inland container

depot, storage facilities, tank farms, cranes, handling equipment, captive power plants, dry-docking and ship repair facilities.

- Leasing in equipment for port handling and floating crafts from private sector, evaluation of which would be on the basis of least cost to the port. The ports will have to ensure leasing of modern equipment under revised conditions.
- Based on least cost to the port for pilotage, the need must be assessed by the CPA on the basis of existing floating crafts/pilots.
- Captive facilities for the port, based on lowest tariff, must be quoted for sale of electricity to the port, provided such industries are port-specific and are approved by the concerned ministries.
- River and other port authority dredging requirements through concession.

Modes of Privatization:

Generally speaking, involvement of the private sector with ports is vital to improving the efficiency under different strategies of private sector participation. Private participation in port and commercial operations can be encouraged by many alternative modes including:

- *Leases* – This is “an agreement conveying the right to use an asset (land or equipment, or both) for an agreed period of time in return for a payment or a series of payments by the leaser to the lessor.” The duration of the lease is between 10 and 15 years. Usually, in this mode, the lesser does not become responsible for investments and in case of construction of any permanent facility, equipment or installations by the leasor, it is to be agreed upon under the lease or concession.
- *Management Contract* – Under such contract, the port authority retains ownership of the assets and remains responsible for provision of further capital, while the private sector is obliged to provide management expertise.
- *BOT Arrangements* – These contracts are legally referred to as “Concessions.” This is due to the fact that they lead to “grant of special privileges by government.” It is a technique of creating, delivering and operating a *public utility*. The BOTs are the most popular tools by which private investment is procured for public services in

various ports.

- *Joint Venture* – If the CPA is allowed by its statutes of establishment to invest in a port related business, it may in association with the private sector form a mixed company which will conduct port operations. This was particularly successful in China (e.g., Shanghai Container Terminals).
- *Stock Market Flotation of Shares* – This means selling of the public port to the private sector through the stock market. However, the government can retain a majority of the shares.
- *Outright Sale* – this means that the public sector assets will be directly sold to a major private investor or a group of private investors (e.g., consortia); usually this is done through a competitive tender and can be a “negotiated sale.”

Recent Improvement of Chittagong Port Operation

According to Mohamad (2002), “No matter how information technology advances, world trade cannot be facilitated without ports. This is exactly why every country needs to develop more advanced and efficient ports for its prosperity”. Chittagong Port has undertaken many ambitious projects to enhance its capacity, improve performance and quality of service, and build adequate facilities to make it a world class port. All documentation at different points regarding container clearance has now been brought to one point with banking facilities where the documentation procedure is being completed within 30 minutes by using a one-stop service center.

The port is now connected with the hinterland by road, rail and river. It is now drafting a multimodal transport policy. All vessels at anchor and berth are interfaced with port operation by shore based AIS traffic control. Security situation of port facilities and ships are monitored as per ISPS code (effective from July 1, 2004). Chittagong Port Trade Facilitation project is working to increase the port’s capacity for cargo and container handling in accordance with international best management practices and standards in the port of Chittagong. This project is working to increase CPA terminal capacity by 50% from the present level, reduce vehicle waiting time to enter and exit the port by 30%,

improve custom inspection time by 30% and customs clearing time for import container by 30%, reduce average container dwell time at least by 20%, ensure vessels turn-around time and berth occupancy rate by 20%, enhance port charges by 20% and remove full container load (FCL) container stripping from the port. The CPA trade facilitation project is also working to install a computerized Container Terminal Management System (CTMS) and MIS to change from the reactive system to a pro-active system, and to reduce collusive and coercive corruption. This project is also constructing port service roads and oil waste receptor plants, and reconstructing/upgrading internal roads (CPTFP, improvement report, 2007). Nearly 83% of the physical work of construction of the New Mooring Container Terminal (NMCT) has already been completed; the rest is expected to be completed by December, 2007. Two berths were already put into operation in September 2006. It was also decided to operate NCT on SOT basis (Minutes, 22/1/07).

Regulatory Framework:

The port is an interfacing point between land and waterways. To provide better service, concerted and coordinated efforts of all the players of the transport sector such as BR, RHD, BIWTC, BIWTA, NBR (customs), MOC, MOS, port users, and trade bodies are of paramount importance. The port authority will discharge their regulatory role under Chittagong Port Authority Ordinance 1976. In particular, the upper ceiling of tariff which the private sector can charge for its facilities would be fixed by an independent regulatory authority set up by the GOB. Both the private investor terminals and the port authority operated terminals would be free to charge less than the notified tariff.

The proposed independent regulatory authority shall also ensure that private investment does not result in the creation of private monopolies and that the private facilities are available to all users on equal, non-discriminatory, and competitive terms. Necessary steps must also be taken so that private investors will be obliged to protect national interests like national security and national emergencies. The private sector will also abide by various statutory requirements for the protection of the environment, anti-pollution measures, safety, navigation, and conservation, and also abide by the directives issued by GOB/ Port authority.

Conclusion and Recommendations

Privatization of port facilities in a planned and systematic way is imperative for Bangladesh since, with increasing globalization, efficient port services and facilities with optimum productivity will be needed to extend port services of international standard to its clientele. The existing legislative framework permits private sector participation in ports but needs to be specified more clearly. The specific suggestions for efficient port operation may be as follows:

1. Ports may continue to discharge their regulatory role under Port Ordinance, 1976. Ports can also take steps to frame regulations consistent with the guidelines in order to enable private sector participation.
2. BOT/SOT model is preferable for private sector participation. Generally a concession period of 20-30 years may be permitted. There must be transparency in inviting bids following two-envelop system. Evaluation will be based on maximum revenue realization to the port using NPV analysis. Ports can form a taskforce comprising port-related agencies for finalization of proposed guidelines.
3. The private investor will be obliged to protect national interests like national security and national emergencies. The private sector will also abide by the various statutory requirements for the protection of the environment, anti-pollution measure, safety, navigation, conservancy, etc. and also abide by the directives issued by the GOB/ Port Authority.
4. The average container dwell time in the port is 15-20 days (Advisory meeting presentation, 2007), whereas in neighbouring countries it is less than 6-7 days. The dwell time could be reduced substantially if the importers take delivery of their containers within the four days free time. In this case an independent regulatory authority set up by GOB can be assigned to i) fix tariff rate which is minimum 10 times greater than the present rate after the allowable duration of four days (tariffs have to be revised suitably every three years on the basis of inflation) so that the port is not used as a store or show room, ii) ensure that private investment does not result in the creation of private monopolies and the

private facilities are available to all users on equal, non-discriminatory and competitive terms.

5. In the case of Chittagong Port there is no network of information developed between the port authority and its users. Every organization has stand-alone computer systems. Even intra-networking system has not been developed within the organization. As per UNCTAD, computerization is a must when handling exceeds 50,000 TEUS. So, introduction of automation and on-line computerized container terminal management system (CTMS) will definitely reduce the port cost and crime to a great extent.
6. In the absence of multi-modal transport systems, the economy is yet to reap the benefits of containerization. In point, after the advent of containers, more than 25 years have passed. Moreover, the port is not connected with the capital, Dhaka, by a good highway. Though Bangladesh is a riverine country, no facility for the transportation of the containers from the port to the hinterland has been developed. A multimodal transport system is needed to minimize congestion in the port and the transportation costs.
7. Access to the information highway that is Computerized Container Terminal Management System (CTMS) and Management Information System (MIS) must be introduced to avoid crime and lower costs with the documentation process.
8. In the absence of a trade facilitation system, many steps (Custom-22 steps, CPA-19 steps) are followed to clear an imported consignment. Besides, the attitudes of importers to use the port as storage place also aggravates the situation. The present system in place to compel the importer to take back empty containers is not sustainable.
9. About 58 stevedoring companies and 2200 C&F agents are licensed and enlisted to CPA. But there is no organization to protect labor rights.

It is vital at this point to consider private sector participation for improving the infrastructure facilities for efficient port operation by

creating a master plan of the port.

GLOSSARY

BIWTC-Bangladesh Inland Water Transport Corporation
 BIWTA-Bangladesh Inland Water Transport Authority
 BOT-Build, Operate and Transfer
 BR- Bangladesh Railway
 CPTFP-Chittagong Port Trade Facilitation Project
 CTMS-Container Terminal Management System
 DWMB-Dock Workers Management Board
 FCL-Full Container Load
 IIFC-Infrastructure Investment Facilitation Center
 ISPS-International Ship and Port Security
 MIS-Management Information System
 MOC-Ministry of Communication
 MOS-Ministry of Shipping
 NBR-National Board of Revenue
 NCT-New Mooring Container Terminal
 PSIC-Port Service Improvement Committee.
 RHD-Roads and Highway
 SOT-Supply, Operate and Transfer

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