

## The Application of Just-in-Time (JIT) Approach to Improve the Management Efficiency of Chittagong Port: Some Observations

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### Abstract

*The paper highlights the perennial problem of the Chittagong Port, including the growing unrest of the dockworkers, mismanagement of port authorities, clashes between the newly appointed berth operators and dockworkers, bureaucratic inefficiency that vitiates the working relationship between Customs, the Port, and the port users regarding the cargo clearing process, lack of transparency in procedures and uniform application of trade regulations, inefficient system of auctioning uncleared cargo, and so on. The paper stresses on the need for improving management efficiency to overcome the multifarious problems of the Port. It recommends adoption of a 'just-in-time' (JIT) approach to improve management efficiency, eliminate all types of wastes, achieve sustained improvement in port operations, and suggests measures to implement the JIT. The measures suggested are to reorganize the CPA and make it an autonomous entity with full authority, reduce the chain of management, introduce merit-based appointments and promotion of employees, arrange for advanced training and skill of employees, flexible management of the CPA and continuous dialogue with conflicting groups, improvement of port health and safety, reduction in cargo congestion, and construction of embankments along the sea side.*

### 1. Introduction

Chittagong port is the only natural port of the world. Its navigability is God-gifted. It has tremendous strategic geographic advantages, which can contribute

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immensely to the country to be an ideal global trade and business pivot. It is the gateway of Bangladesh as well as of a vast landlocked region across the border. Chittagong port is not only the major opening of the economy of Bangladesh, but there is no second installation in Bangladesh equivalent to Chittagong in view of its strategic, geographic, economic and political importance. This port has all the prospects to serve the landlocked eight northeastern states of India, Nepal, Bhutan and a vast region of Myanmar and China most economically and cost-effectively. These countries have also expressed their keen interest to use Chittagong port for their international trade. Bangladesh is also at the bridgehead point of the world's two most burgeoning economic blocs – SAARC and ASEAN. The proposed Trans Asian Highway and Railway are also expected to have direct linkage with Bangladesh. Therefore, in future Bangladesh will have all good international sea, rail, and road communications linking SAARC and ASEAN at the middle.

Chittagong is the major port for Bangladesh, handling around 85-90% of the nation's trade. Its importance to the country can not be overemphasized. The Government of Bangladesh (GOB) earns around 30% of its revenue from Custom House Chittagong (CHC) and Chittagong Port.

## 2. Some Examples of Management Inefficiency of Chittagong Port

However, despite the growing importance of Chittagong Port, its efficiency of management and cargo handling has not improved up to the expected and required level to cope with the changing circumstances. Some of the examples related to its management inefficiency are enumerated below for policy implication:

- a. **Example-I:** The growing unrest among some 5,000 workers in Chittagong Port has doubled turn-around time and fuelled surcharges. The workers demand more power while the Port users blame the eroding efficiency of the premier port on the power of the dockworkers. The latest spate of unrest came in July, 2010 when the dockers launched a 10-day agitation programme, including a strike, asking implementation of the decisions made regarding their earlier demands. They demanded the re-instatement of the dockworkers fired during the last Caretaker Government regime, the employing of labourers by rotation through a booking centre under Chittagong Port Authority (CPA), the reintroduction of the labour department, and the opening of closed residential buildings. The Chittagong Port Users Forum opined that the CPA should tighten its grip and ensure accountability. The importers are of the opinion that the workers demand money at every point. If the importers do not pay, the workers start delaying. The average turnaround time has increased to five to six days now

from the average of 2-4 days during the regime of the Caretaker Government. According to the port officials, the turnaround time was more than 10 days before the Caretaker Government launched a reform drive. The port users blame the port management for its soft approach to the workers. The CPA is working to activate the centre booking cell by empowering the leaders of the workers and the step is strongly opposed by the port users. According to the spokesman of Bangladesh Shipping Agents Association, the workers should continue under the berth operators to maintain peaceful and efficient services. The Caretaker Government dissolved the Dock Workers Management Board that was comprised of more than 10,000 workers from 22 politically associated trade unions, and stevedors. The previous Government also sacked 4000 workers mainly for their overage and inefficiency. The Government introduced a single point operation system on May 16, 2007, and retrenched 4,000 workers to bring efficiency to the port. But a three-year contract with the berth operator ended on May 16, 2010 and the workers have already started regrouping again to re-instate the sacked workers. The CPA admitted that the turnaround time has increased. The CPA is of the view that the welfare of both the workers and the businessmen should be taken into consideration and discussions should be made with all to resolve the problem. The port users opine that the berth operators should control the workers. If the port users are forced to engage an unnecessary number of workers, they will have to stop work and leave the port. (Old ghost haunts Chittagong Port, The Daily Star, July 29, 2010).

- b. **Example-II:** There was almost a break-down in the management of Chittagong Port, which is the lifeline of the country's economy. A meeting was held in the office of the Prime Minister on September, 2010 to discuss the situation in Chittagong Port. The meeting was presided over by the Principal Secretary to the Prime Minister. The CPA presented a paper in the meeting identifying the reasons for the precarious condition of the Port. Representatives of shipping agents association, BGMEA, Chittagong Chamber and other organizations as well as the high officials of the CPA attended the meeting. During the meeting the Principal Secretary instructed the Chairman of the CPA to promptly reduce the turnaround time in the Port to a minimum. One official of the port was transferred for inefficiency. In the meeting, the Shipping Ministry and the CPA blamed each other for the deteriorating situation in the Port. There was serious congestion of ships and containers due to mismanagement. As this news reached the outside

world, many ships cancelled their Chittagong bound journey. Many exporters became worried about the shipment of their cargo. It was decided in the meeting to set up within a week a port advisory committee, finalise the pre-qualifying tender for operation of the NCT, strengthen security for preventing theft of cargo from containers and install **cctv** Cameras. Special emphasis was given on controlling labour unrest. Port users were very hard on the Chairman of the Port. Port officials were held responsible for the deteriorating situation. The Chairman of the Port admitted the difficult situation in the Port. Representatives of trade union bodies called for taking action to tide over the situation. They complained that there was no control mechanism in the Port. Work slowed in the container jetty. There was no sign of reduction in Container and ship congestion. The situation worsened further with the arrival of more ships and containers. The number of ships stood at 83 in the jetty and at the outer anchorage on September 17, 2010. Many Chittagong bound ships from Singapore cancelled their trips. The economy was seriously affected. It was estimated that the garment sector lost about Tk. 10 billion in four months because of slow work in the Port. The loss to the entire economy was much more. Dhaka bound containers piled up at the port. In the meeting, five areas were specially discussed, which included the problem relating to appointment of berth operators, labour management, declining efficiency, condition of the Port authority, and implementation of on-going projects. There was delay in appointing berth operators through tendering. There was a 30 percent increase in containers carried by ships. There was lack of equipment in the port. The tender procedure for handling created problem. The domination of trade unions and litigation over container handling resulted in the increase of turnover time. As a result, the exporters could not export their cargo on time and many buyers cancelled orders. During the month of September, 2010, about 1000 containers piled up in the shed of the Port due to shortage of trains for carrying the containers to Dhaka. Many ships carrying edible oil, sugar, fertilizer, salt, food grains, cement clinker and petroleum products waited in the outer anchorage and the jetty. The ships did not get berth in the jetty. Mills and factories faced shortage of raw materials which could not be unloaded from the port. The whole country and the business community in particular was concerned about the operation of the Chittagong Port. (“Mismanagement at Chittagong Port”, The Financial Express, September 21, 2010).

- c. **Example-III:** The crisis in Chittagong Port erupted on October 8, 2010 with the appointment of six berth operators. Some groups then demanded that the operations by the newly appointed berth operators be done by existing dock workers. Following the clash, the newly appointed berth operators stopped their operations on October 8, 2010. Since then, the situation at the country's prime sea port snowballed into a crisis and the logistics supply chain began to crumble. The army was then deployed at Chittagong Port. In parallel, the Government also formed an advisory committee on the Port. The meeting of the committee decided that coordinated steps would be taken to run the country's principal seaport after consultation with port users and important stakeholders. (The Independent, October 30, 2010).
- d. **Example-IV:** The working relationship between customs, CPA, and the trade community concerning the cargo import/export clearing process is inefficient, plagued by bureaucracy and has been an area for corrupt practices. There is little transparency in procedures on the uniform application of trade regulations and procedures. The current customs processes and procedures for import documentation consist of 13 to 16 steps and is paper-based with minimal computer support. It is a cumbersome, redundant, paper ledger and list-oriented process.
- e. **Example-V:** The auction system of unclaimed cargo is very inefficient. The current regulations require that if an importer does not clear the imported cargo within 30 days, it is classified as unclaimed cargo by law and is subject to customs auction. The auction process for unclaimed goods requires an initial bid of 60% of the estimated value of the goods. If not sold, the requirement is to re-auction seeking a bid higher than the one previously received. If not sold at this time, then at the third auction the items are sold to the highest bidder. This process has been the subject of much concern because of the involvement of 'ring' groups that worked together to manipulate the auction process and dramatically reduce the final auction price. This in turn reduces national revenue. The whole process can take one year and in some cases much longer. About 20% of the CFS storage sheds and 11% of the container yard contain unclaimed cargo. Because of the shortage of storage space, many containers are used for storage in the port and are no longer available as an instrument of international trade traffic. According to CPA estimates, the CPA loses on average Tk. 9 crore of revenue every month just to facilitate storage area to custom authority. The current position, arising from several years of trying

to manage an ineffective system, has left many cargoes still awaiting disposal after some years - container items over two years old and also including some that were originally foodstuff items. It is evident that the Auction House process has encouraged some unscrupulous people to use the system for money, making not the trading of goods.

### 3. **Need for 'Just-in-Time' Approach to Improve Management Efficiency**

From the above brief description of some of the examples related to the problems of management inefficiency it is quite evident that the past experience of Chittagong Port is the result of a catalogue of action and attitudes of self-interested groups of port workers or port users. For the future health of the port, confrontation must be replaced with co-operation. The strategic aim for Chittagong Port over the coming 10-15 years should be to become the most important port not only nationally but also regionally, serving the emerging markets of Bangladesh and the neighbouring countries. To achieve this Chittagong must progress to become a port internationally recognized, well-regarded for its service and efficiency and a reputation for transparent, open and non-corrupt dealing. To reach this position will require many changes and great commitment from all various parties – from the GOB through to the individual workers – involved in the port activity. The current situation provides not only a practical example of what can be achieved with a change in management but also a tremendous opportunity to 'kick start' the required process of change. Needless to say, the process of change underlies the importance of the implementation of 'Just-in-Time'(JIT) approach in the management of Chittagong Port. Below is an attempt to analyse the different aspects of 'Just-in-Time'(JIT) approach and to apply the concept to improve the management efficiency of Chittagong Port.

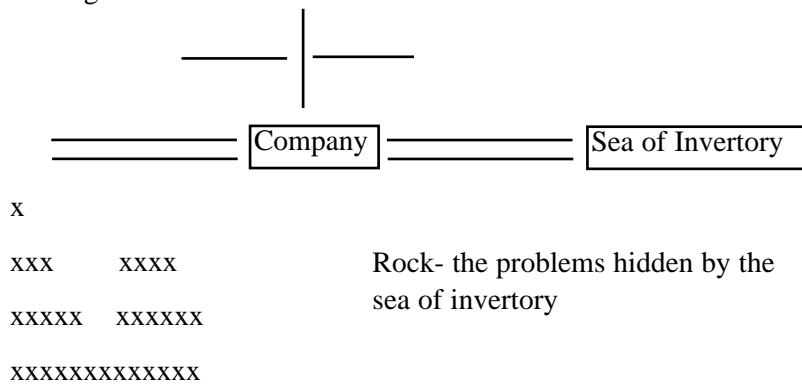
### 4. **'Just-in-Time' Approach at a Glance**

The term 'Just-in-Time'(JIT) is used to refer to an operation system in which materials are moved through the system, and services are delivered with precise timing so that they are delivered at each step of the process just as they are needed – hence the name just-in-time. Initially, the term JIT referred to the movement of materials, parts and semi-finished goods within a production system. Over time, the scope of JIT was broadened and the term became associated with lean production. At present the two terms are often used interchangeably to refer to a highly coordinated, repetitive manufacturing or service system designed to produce a high volume of output with fewer resources than the more traditional repetitive system, but with the ability to accommodate more variety than the traditional system (Stevenson, 2005).

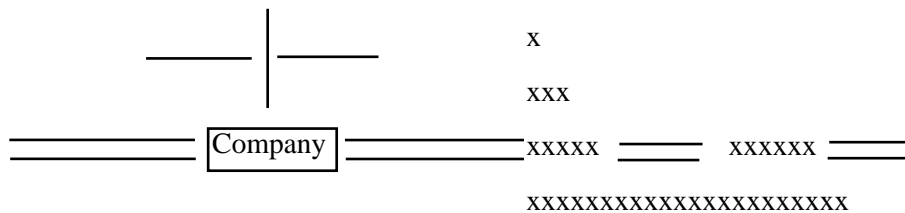
The JIT philosophy refers to (a) elimination of waste in its many forms, (b) belief that ordering / holding costs can be reduced, and (c) continuous improvement, always striving to improve. The element of JIT, among others, include the following:

- i) Regular meetings of the work force (e. g., daily/weekly);
- ii) Discuss work practices, confront and solve problem;
- iii) An emphasis on consultation and co-operation (i.e., involving the work force) rather than confrontation;
- iv) Expose problems, rather than have them covered up;
- v) Reveal bad practices;
- vi) Modify machinery, e.g., to reduce set up time;
- vii) Reduce buffer stock;
- viii) Take away the ‘security blanket’ of stock.

The concept of JIT may be shown with the help of a classic diagram as the following:



If the inventory level is reduced, the rocks (problems) become exposed as below:



Now the company can see the rocks (problems) and hopefully solve them it runs aground.

One plan to expose the problem is simply to:

- i. Make a large amount of finished goods stocks to keep the customers supplied;
- ii. Try running the production system with less inventory to expose problems;
- iii. Revert to the original levels of inventory until you have had time to fix the problems you exposed;
- iv. Repeat the above – hence continuous improvement.

Some of the benefits of JIT may be enumerated as follows:

- i. better quality products/services;
- ii. better responsibility of every worker;
- iii. reduced cycled times;
- iv. lower set up times;
- v. smoother production flow;
- vi. cost service;
- vii. higher productivity;
- viii.
- ix. higher worker participation;
- x. more skilled workforce, able and willing to switch roles;
- xi reduced space requirements;
- xii. improved relationship with suppliers.

However, it should be mentioned here that implementing a JIT system is a task that cannot be undertaken lightly. It will be expensive in terms of management time and effort, both in terms of the initial implementation and in terms of the continuing effort required to run the system over time.

##### 5. Measures to be Undertaken to Implement JIT

For application of JIT approach to improve the management efficiency of Chittagong Port the following measures should be undertaken with no further delay:

- a. **An Autonomous CPA for Quick and Timely Decision:** Working within the framework, and with clear guidelines of GOB's overall national transport policies, the CPA should be responsible for the policy, safety, security and overall strategic planning for the port, with the authority to contract out to the private sector for those areas of activity from time to time considered appropriate. Working with clearly defined job descriptions, and within a clear remit from Government, it should not be necessary for



senior post holder of CPA to continually refer/travel to Dhaka for decisions regarding the day to day management of the port. An autonomous CPA with fully delegated authority bringing together the various groups for the total port benefit is required. Responsibility can not be exercised without having the full authority to do what is necessary.

- b. **Reduction in the Chain of Management:** The commercial organizations expect that the CPA should act and react promptly to a variety of situations faced by them. If the ready response is not available from CPA, it will only lead to frustration and delay and be detrimental to the working relationship. The reduction in the chain of management is required for this purpose, which will also assist in reducing the possible number of opportunities of corrupt practices.
- c. **Merit-based Appointment and Promotion of Employees and Lesser Number of Employees with Advanced Training and Skill:** The CPA should have an establishment basically of lesser number of employees but higher skilled/qualified than now and including also positions requiring new skills. It should be structured to reflect an organization where responsibility and job description is clear with the appropriate authorities delegated to the personnel involved. Appointment/promotion/advancement should be based on merit, experience and performance, not just time in the job.
- d. **Dynamic and Flexible Management of CPA and Continuous Dialogue Among the Conflicting Groups :** The CPA should deal with various organizations – ship owners, agents, trade associations, port user business groups, workers etc. with prudence, modern management systems and procedures. It must be able to meet them through continuous dialogue on level terms in relation to management decision making. It must be dynamic and flexible, not only able to respond to the customers but also be innovative in terms of port development.
- e. **Harmonization of Customs Process & Procedures to Facilitate Global Trade :** The efficiency and effectiveness of customs in processing trade goods has a significant influence on the international competitiveness and economic growth of the country and in the expansion of foreign trade in the global market place. The harmonization of customs processes and procedures is essential to the objective of facilitating global trade. Customs regulations and policies must not negatively impact on the effective and sufficient transfer of goods through the port.

- f. **Improvement of the Port Health and Safety Issues, Reduction in Cargo Congestion, Rationalization of Berth Areas and Container Handling Activities:** The health and safety issues are also important factors for efficient management of the port. The improvement of security and reduction of congestion of cargo, vehicles and extraneous personnel from the working area and the port will definitely contribute to the management efficiency. The rationalization of berth areas with the development of the container handling activities and the removal of redundant structures will provide the opportunity for allowing revised berth layout, roadways and the proper fencing and demarcation of the working areas. No one can deny the fact that access to and from the port is an important factor in determining the efficiency of the port. Efforts should be made to improve the road, rail and water access to the port if the full benefits of the 'door to door' container traffic are to be realized. The port organization has to be in such a position to be able to accept the modern requirements of international port operation. The national situation must be such as to be attractive to an external investor but also sufficiently well-organized to serve the national requirements for trade. The CPA should maintain direct control of all navigational matters in addition to the port health and safety, security and environmental issues.
- g. **Application of the 'landlord' Concept :** The 'landlord' concept may be applied for efficient management. The 'landlord' port arrangement is one of the most effective of the public/private sector involvement arrangements. The 'landlord' concept allows for the necessary developments in the port facilities, funded by investments and management from the private sector but with monitoring arrangements in place in a port authority to ensure required levels of service to be provided to meet national circumstances.
- h. **Reclamation of the Land by Constructing Embankment on the Sea Side from Patenga to Sitakund and on the Eastern Coast of Sandwip channel for Development of Berthing and Navigational Facilities of the Port for Large Ships and Ocean-going Vessels :** The experts on port development are of the opinion that through reclamation of land by constructing an embankment on the sea side from Patenga to Sitakund measuring approximately 25 miles along the coast line on the Bay of Bengal a modern sea port can be established. For providing backyard facilities for the port, vast land can be developed inside the **same** embankment. As a result of that, the existing industrial activities in the city may be upgraded and modernized compared to the present situation, which

will create facilities for setting up of new industries, factories and port related business activities in the region.

Beside this, another multipurpose embankment along the eastern bank of the Sandwip Island may be constructed to maintain the required depth in the “Sandwip Channel” for the ocean going vessels and ships. This will help develop a vast land on the eastern coast of the Sandwip island carrying out dredging activities in the Channel and filling sand inside the embankment. With the implementation of this plan, jetty can also be constructed on both sides of the channel with adequate backyard facilities. An embankment can also be constructed all around the Sandwip Island and this can play a great role in protecting the proposed port and consequently protect the ships on anchorage during cyclone and storm surge disaster. On the other hand, if an embankment/dam is constructed on the north side of Sandwip Island linking Sitakund with sluice gates, hydroelectric power generation can be ensured and can be supplied in the Key installations of Chittagong Port City. Moreover, the embankment can also connect Sandwip with Chittagong City, which will play an important role in the expansion of port activities in the eastern bank of Sandwip Island.

It should also be mentioned here that the average depth of the “Sandwip Channel” from Patenga to Sitakund is approximately 30 feet, which can provide favorable navigation and berthing facility for large ships and ocean going vessels as well. If port facility is developed on both banks of the channel, it will facilitate berthing and anchorage opportunity for at least 500 ocean going vessels at the same time in the same Channel.

- i. **Re-organization of CPA to Provide for an Effective, Firm and Resolute Management of All Port Activities :** The CPA must be re-organised to provide an effective, firm and resolute management and be the focus for coordination of all port activities and development. In relation to good governance and anti-corruption strategies, the CPA should provide
  - i. Clear lines of management responsibility and devolved authority;
  - ii. Shorter management chain and therefore, less opportunity for interference;
  - iii. Quicker management response;
  - iv. More direct personnel regulation ;
  - v. Fewer people;
  - vi. Simplified tariff;

- vii. Majority of Port charges automatically prepared, invoiced and collected;
- viii. Computer related operating systems;
- ix. Monitoring with management information system;
- x. Potential for commercial competition to ensure cost effective charges; and continuous dialogue with all the parties involved in cargo handling and the use of port services.

## 6. Concluding Remarks

To conclude, the port is a place where international shipping either originates, terminates or transits and thereby of necessity making it highly dynamic venue, which will keep pace with commercial and economic activities. Chittagong Port is not only the major opening to the economy of Bangladesh, it occupies a unique position in the country in view of its national and international importance. It is unlikely, simply because of its geographical position, that Chittagong will ever be a hub port in the major world container trade routing but it is likely that it will continue to be served for the containers from the likes of Colombo and Singapore. The CPA's strategic aim should be to make this port internationally important central port for the region, having in mind its location and opportunities that are provided from not only a developing Bangladesh economy but also in relation to the surrounding Indian states and Nepal. The CPA has a vital role to play in this regard. It has been given the responsibility to manage the Port on behalf of the Government. It is important that with responsibility there must also be given the authority to perform the tasks required to apply the JIT approach to manage the Port efficiently. The Government must therefore devolve to CPA the appropriate powers to do so. In this connection it should be mentioned here that the Caribbean Shipping Industry has achieved tremendous success following the JIT approach in its management.

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