ASET JOURNAL OF MANAGEMENT SCIENCE
A Bi-Monthly Peer Reviewed Journal

Aset Journal Of Management Science
Volume 1/ Issue 3/ pg: 32 - 41

A STUDY ON CONTAINER TERMINAL OPERATION IN CHENNAI PORT

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ABSTRACT

This study highlights the performance of Chennai port environment with reference to the ships. Chennai port comes under the category of development process on the east coast of India as it is considered important port. India has around 7720km of natural peninsular coastline which is strategically located on crucial east-east trade route which linked Europe, Far East and sea ports of India. A view to improving the performance and productivity levels of the container port terminal and brings it on par with the standards of the leading container ports of the neighboring countries through modernization and up gradation to bring mainline vessels. A comparative study of performance of ports during the pre-reform and post reform period of trade has been conducted. According to a study in Chennai port performance of ship development Chennai ranked 2nd best cargo handling next to JNPT, and its operational efficiency high it's performance indicators during the period 1988-89 to 2008-09. The secondary source of data was gathered on performance of Cargo Ship at Chennai Port from 1986-87 to 2008-2009. The analysis reveals that total traffic handled is high when compared to other ports of Tamil Nadu.

KEY WORDS

Container, Chennai port, Vessel, Operational efficiency, Cargo

INTRODUCTION

A container terminal is a facility where containers are transhiped between different transport vehicles, for onward transportation. The transhipment may be between ships and land vehicles, for example trains or trucks, in which case the terminal is described as a maritime container terminal. Cranes are used for loading and unloading shipping containers from container ships. They form a common means of commercial intermodal freight transport. A container crane (also container handling gantry cranes , ship-to-shore crane) is a design of large dock side (maritime) A dock is man-made feature involved in the handling of boats or ships. However the exact meaning varies between different variants of the English language, Gantry crane .

Both overhead travelling cranes and gantry cranes are the types of cranes which lift objects by a Hoist which is fitted in a tram and can move horizontally on a rail or pair of rails fitted under beam crane (machine).

A crane is a lifting machine equipped with a winder, wire ropes or chains and sheave that can be used both to lift and lower materials and move them horizontally found at container terminal.

Containers came into the market for international conveyance of sea freight almost five decades ago. They may be regarded as well accepted and they continue to achieve even more acceptance due to the fact that containers are the foundation for a unit-load-concept. Containers are relatively uniform boxes whose contents do not have to be unpacked at each point of transfer.

They have been designed for easy and fast handling of freight. Besides the advantages for the discharge and loading process, the standardization of metal boxes provides many advantages for the customers, as there are protections against weather and pilferage, and improved and simplified scheduling and controlling, resulting in a profitable physical flow of cargo. Regarding operations, we need to distinguish whether we refer just to a container (which in that sense is called a box) or we specify the type of container under consideration.

Sources of Data, Charts, Figures and Pictures

Source:

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3. https://www.globalpsa.com
4. https://www.statista.com/chennaiport
5. https://www.chennaiport.gov.in/content/port-profile
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https://link.springer.com/article/10.1007/s00291-003-0157-z

1.2

OBJECTIVES OF THE STUDY

Primary Objecctives:

- Observation in the working process
- Analysed the sector.

Secondary Objectives:

- Interaction with people of freight forwarding industry.
- Interaction with the company SGS-Logistics and shipping
- Previous projects internet etc
- To study container terminal operation.

- To analysis loading and unloading and discharging of container cargo from the vessel to truck and from the truck to vessel vice versa.
- To study facilities that the container terminal provides to its user.
- To study berth allocations and berth scheduling of the container vessels in container port.
- To study gate opening and gates operation.
- The main objective of this study is to develop simulation models of the case study container terminal, which can be used to improve the performance of the different activities at the container terminal.

1.4 SCOPE OF THE STUDY

Containerization has been a driving force behind globalization and is dominantly with the movemens of commercial goods such as parts and retail goods. It began by replacing the conventional system of handling break-bulk cargo in general cargo vessels or passenger vessels that handled express type shipments. These goods when hanled individually were subject to great deal of loss and damage(Long shoring was a synonym for organized crime in the fifties). The first step was to containerize the most valuable cargos such as high end consumer goods were containerized followed by most manufactured goods, such as parts, More recently, a growing quantity of commodities such as specially grain and wood products are being shipped in containers. Among the factors that lead to the usage of containers to ship commodities are trade imbalance providing a pool of empty containers for backhaul movements, the rising long term price of commodities making containerization an proposition, and intermodal transport systems have extended market coverage. Containers can be shipped to a wide variety of destinations in freight markets, from a single unit to large stacks.

The past 25 years have bee a time of unprecendented growth in the scope and scale of the maritime container business. During this intense period of development , massive investment in container shipping capacity and landside infrastructure has helped to open up new manufacturing and consumer markets worldwide, enabling global trade as we know it today, in the process, global container port throughou has rocketed from less than 76 million TEU at the end of 1980s to more than 524 million TEU in 2008.

At 6 million TEU in 1988, singapore wasthe largest container port. It topped the global port league again in 2008, at nearly 30 million TEU. Many factors have played into the considerable production effeciences that container terinal operators have been able to deliver during this period of rapid growth in vessel size and throughput. But undoubtedly, the achievements of the last 20 years would not have been possible without sophisticated container handling systems and technology. Since the late 1980s, the industry has ben supported by a growing range of export information systems to co-ordinate -- and more recently automate - the planning and management of container and equipment . In particular, suppliers of commercial off-the-shelf (COTS) teminal operating syste (TOS), led by Navis, Have given the industry acess to professional and purpose-built software sector has played a critical role in ongoing improvement of TOS functionality and development of associated applications. Today, the TOS is at the heart of an increasingly complex web of program, systems and devices designed to enhance operating efficiencies, improve management controls and business intelligence, and connect marine terminal with wider world.

This research focused on identified and developed a container terminal model for arrival of vessels and unloading container activities until vessels depart only. The developed system was tested by the data gathered from the case study container terminal. This study covered the vessel which is load with container only.

3.1 RESEARCH DESIGN

Research design is the specification of the method and procedure for acquiring the information needed to solve the problem. It is overall operational pattern or frame work of the project that stipulate what information to be collected from which source and by what procedures. The research process adopted for this study is “descriptive” in nature

1. These decisions should be based on appropriate studies, evaluations and observations.
2. Researches furnishes us with information and abilities expected to take care of the issues and to address the difficulties of a quick moving dynamic climate.

Method of Data Collection:

The data needed for the research study were collected by two sources primary sources and secondary sources.

Primary data:

Essential information were gathered through overview from the clients of our organization

utilizing the survey. Poll assists with perceiving the clients' assumption.

Secondary data:

Optional information required for directing this examination work were gathered from pamphlets of the organization and worker profile, books web and different diaries and so on

3.3 LIMITATION OF RESEARCH

- It is ensure provide correct information of research
- Not provide too many information about port authorities.
- It is hard to collect the questionnaire and interviews for research
- It is highly restricted area in port
- People in terminal are so busy
- So it is tough to collect data.
- You can include this point as a limitation of your research regardless of the choice of the research area.
- Because (most likely) you don't have many years of experience of conducing researches and producing academic papers of such a large size individually.
- The scope and depth of discussions in your paper is compromised in many levels compared to the works of experienced scholars.

DATA ANALYSIS AND INTERPRETATION

Table 4-1-1 Major Cargo Handled at Chennai Port

Source:2010-2020;Indian Ports Association 2020;Chennai Port Trast HP Supplement:2010(Apr 2010 to Mar 2008) & 2020(Apr to Sep)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
P.O.L	12,794	13,112	13,425	13,882	13,295	13,425	12,784	12,736	11,890	13,597	6,222
IRON	10,815	8,247	7,882	2,176	97	52	0	146	0	0	0
Fertilizer	882	761	591	776	633	421	415	541	260	268	168
Coal	3,990	4,684	3,362	2,503	961	0	0	0	0	0	0
Container	18,049	20,581	23,476	29,421	30,075	29,708	28,330	29,945	30,210	28,850	11,970
Other	10,624	10,106	12,321	12,702	10,646	9,798	9,576	9,173	7,700	7,499	6,058
Total(Tons)	57,154	57,491	61,057	61,460	55,707	53,404	51,105	52,541	50,060	50,214	24,418

Container handling trends

Container handling volume of Chennai port for the last four years has been fluctuating at around 3.0 million TEUs. In FY 2017, the handling volume reached a maximum of 3,500 thousand TEUs. However, the volume decreased to 1,485 thousand TEUs in FY 2018. In the first half of FY 2019, the volume increased by 5.5 % compared to the same period of the last fiscal year.

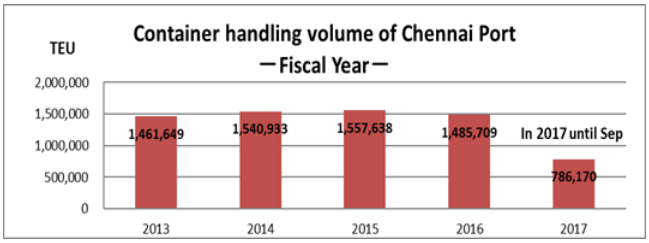

Figure 4-1-1 Container Handling Volume at Chennai Port
(Fiscal Years (FY) Base 2013-2017)

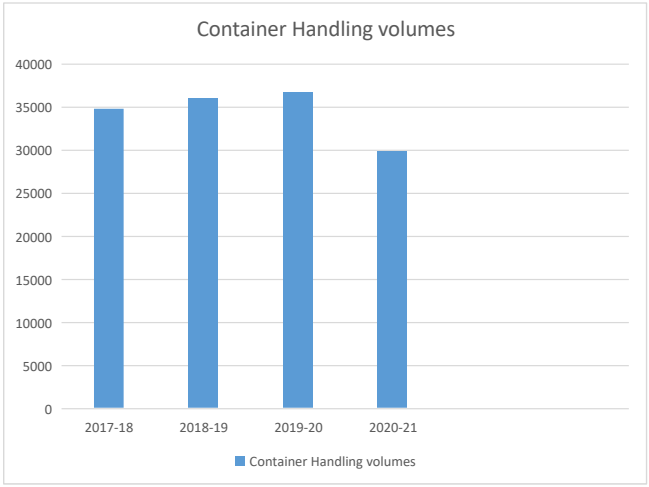

Figure 4-1-2 Container handling Volumes at chennai port (2017-21)

There are three container handling ports in the northeastern area of Tamil Nadu state and each is located in close proximity to one another. Container demand in the entire Chennai area has recently been increasing. Total number of handling containers reached 36825 thousand TEUs in FY 2020 which represents an annual growth rate of 7.8% for the last three years. Container handling volume of chennai port.

Container Terminal

There are two container terminal in chennai port maintained by two companies respectively;

- DP world
- PSA

DP World

Dubai Ports World is an Emirati multinational logistics company based in Dubai, United Arab Emirates. It specialises in cargo logistics, port terminal operations, maritime services and free trade zones. Formed in 2005 by the merger of Dubai Ports Authority and Dubai Ports International, DP World handles 70 million containers that are brought in by around 70,000 vessels annually. This equates to roughly 10% of global container traffic accounted for by their 82 marine and inland terminals present in over 40 countries. Until 2016, DP World was primarily a global ports operator, and since then it has acquired other companies up and down the value chain.

Dubai Ports International (DPI) was founded in 1999.[2] Its first project was at Jeddah, Saudi Arabia, collaborating with a local partner on the management and operation of the South Container Terminal (SCT). DPI then went on to develop operations at the ports of Djibouti in 2000, Vizag, India in 2002 and Constanta, Romania in 2003.[2] In January 2005, DPI acquired CSX World Terminals (CSX WT).[3] It was later, in

September 2005 that Dubai Ports International officially merged with the Dubai Ports Authority to form DP World.[4] The rapid expansion through acquisition continued in March 2006 when DP World purchased the fourth largest ports operator in the world, P&O for £3.9 billion.

CONCLUSION

In generally container terminal operations are becoming more and more important role in the development of port infrastructures as well as the economy's growth of a country.

Proper management of container terminal leads to incredible performance of container terminal operation while loading and discharging the container cargo. Berth planning is main important factor of the terminal operation, the liner company has to plan in advance the berth schedule before the ship arrive at the container terminal port this is done through IDE systems information interchange and as well as gate schedule for the delivery of container cargo.

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