Containerisation in the Indian Ocean Shipping: A Comparative Study on Calcutta, Bombay and Singapore Ports, 1965s-2000

Thesis submitted to Jadavpur University for the award of the Degree

of

DOCTOR OF PHILOSOPHY

in Arts

By

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Registration No. A00HI1100518

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Kolkata – 700032

2025

Certified that the Thesis Entitled

Containerisation in the Indian Ocean Shipping: A Comparative Study on Calcutta, Bombay and Singapore Ports, 1965s-2000 submitted by me for the award of the Degree of 'Doctor of Philosophy in Arts' at Jadavpur University is based upon my work carried out under the Supervision of Prof. Rup Kumar Barman, Professor of History, Jadavpur University (on-lien) and Vice-Chancellor of Bankura University and that neither nor any part of it has been submitted before for any degree or diploma anywhere / elsewhere.

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Vice-Chancellor, Bankura University Department of History Faculty of Arts

Jadavpur University Kolkata – 700032 2025 **Certified that the Thesis Entitled** Containerisation in **the** Indian Ocean Shipping: **A** 122

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Dr. Rup Kumar Barman) Professor, Department of History Jadavpur University Kolkata-700032 55

, India (Soumyajit Mukherjee) PhD Research Scholar Jadavpur University Kolkata-700032, India Preface My interest in the unitisation of maritime transport grew first when I read a paper on the source of productivity change in ocean shipping by authored by Nobel Laureate Professor Douglass C. North. The very debate on whether technology or institutional change was the prime mover of the decline of transport costs and fostered globalisation and growth in ocean shipping induced me to think about twentieth-century history. I thought of containerisation first because this little box brought about both technological and structural transformations in ocean shipping. Furthermore, literature on maritime-economic history is concentrated mainly on the pre-modern and, to a lesser extent, colonial periods. Maritime historians hardly prefer to cross the nineteenth-century horizon, and those who do lack grounds among their peers! Later on, I undertook a teaching course titled 'The Twentieth Century World: A History of International Relations since 1945' at Jadavpur University as a research fellow. This course provided me with an opportunity to dig deeper into the contours of the changing nature of the international economy since the Second World War. While going through a vast section of literature on both maritime history and economic history, I found that there is a big gap in research on the technological as well as structural transformation in world shipping in the twentieth century. Many of the debates focus on the issue of steam, which is often referred to as 'steam globalisation'. Rather, I argue in this thesis that the introduction of a very little metal box—a container—has transformed the whole oceanic world of the twentieth century on both sides of the Suez. However, this research focuses mainly on the growth of containerisation and container shipping in the waters east of Suez, with a case study of three major international ports. It explores three basic questions: Was there a precondition for containerisation in the Asian ports? Did containers, as a harbinger of twentieth-century globalisation in Asian waters, bring any structural changes in the vast realm of the maritime domain, such as port policy, customs, and logistics? And did the adaptation of the containerisation project fetch a fruitful result in terms of economies of scale in the Asian economy? Based on the vast archival records of the maritime trade and economy from both government and corporate firms located in five major cities—Calcutta, Bombay, New Delhi, Ahmedabad, and Singapore—this research has demonstrated that, prior to containerisation, Asian ports featured complex collaboration among stakeholders and supported vibrant international trade networks. The findings highlight that containerisation introduced greater operational efficiency, reshaped economic relationships among port users—importers, exporters, freight-forwarders, stevedores, shippers, shipowners, and government—and shifted the balance of benefits towards those able to adapt rapidly. By and large, the thesis has examined and established how containerisation fundamentally altered the maritime landscape of the Indian Ocean World.

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. At first, I am much indebted to and have a great sense of respect for my Ph.D. research supervisor, Prof. Rup Kumar Barman, for his kind support, diligent efforts, healthy criticism, encouragement, and constructive suggestions, without which this work would have never evolved. In fact, his constant support, both officially and academically, and timely intervention during the last phase of my thesis writing, cannot be explained in words. Without that, I would not be able to turn in the thesis in proper time. I am really grateful to him.

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Singapore, National Library Singapore, ISEAS Singapore and NUS, West Bengal State Archives, Kolkata Port Trust, Mumbai Port Authority, Bombay Chamber of Commerce, Indian Merchant Chamber of Commerce, Asiatic Society Bombay, Container Corporation of India, Calcutta Chamber of Commerce, Bharat Chamber of Commerce, Bengal Chamber of Commerce, Tea Board India, Indian Maritime University, Central Secretariat Library Delhi, and PM Library Delhi for providing me the data, files, notes and sources upon which this research stands. I have benefited from the West Bengal State Government Research Fellowship Award and the ICHR for providing me with

Preface

Oceanic politics and maritime identity have become increasingly timely issues in recent times. Countries worldwide, and especially Asian states, have started paying increasing attention to the sea. In an era of globalisation, trade and multicultural identity, a country's potential in world shipping has become a very crucial indicator. Such an environment of world business and geopolitics induced me to think about the twentieth-century maritime history. However, my interest in the unitisation of maritime transport grew first when I read a paper on the source of productivity change in ocean shipping authored by Nobel Laureate Professor Douglass C. North. The very debate on whether technology or institutional change was the prime mover of the decline of transport costs and fostered globalisation and growth in ocean shipping induced me to think about twentieth-century history. I thought of containerisation first because this little box brought about both technological and structural transformations in ocean shipping. Furthermore, literature on maritime-economic history is concentrated mainly on the pre-modern and, to a lesser extent, colonial periods. Maritime historians hardly prefer to cross the nineteenth-century horizon, and those who do lack grounds among their peers! Later on, I undertook a teaching course titled 'The Twentieth Century World: A History of International Relations since 1945' at Jadavpur University as a research fellow. This course provided me with an opportunity to dig deeper into the contours of the changing nature of the international economy since the Second World War. While going through a vast section of literature on both maritime history and economic history, I found that there is a big gap in research on the technological as well as structural transformation in world shipping in the twentieth century. Many of the debates focus on the issue of steam, which is often referred to as 'steam globalisation'.

Rather, I argue in this thesis that the introduction of a very little metal box—a container—has transformed the whole oceanic world of the twentieth century on both sides of the Suez. However, this research focuses mainly on the growth of containerisation and container shipping in the waters east of Suez, with a case study of three major international ports. It explores three basic questions: Was there a

precondition for containerisation in the Asian ports? Did containers, as a harbinger of twentieth-century globalisation in Asian waters, bring any structural changes in the vast realm of the maritime domain, such as port policy, customs, and logistics? And did the adaptation of the containerisation project fetch a fruitful result in terms of economies of scale in the Asian economy?

Based on the vast archival records of the maritime trade and economy from both government and corporate firms located in five major cities—Calcutta, Bombay, New Delhi, Ahmedabad, and Singapore—this research has demonstrated that, prior to containerisation, Asian ports featured complex collaboration among stakeholders and supported vibrant international trade networks. The findings highlight that containerisation introduced greater operational efficiency, reshaped economic relationships among port users—importers, exporters, freight-forwarders, stevedores, shippers, shipowners, and government—and shifted the balance of benefits towards those able to adapt rapidly. By and large, the thesis has examined and established how containerisation fundamentally altered the maritime landscape of the Indian Ocean World.

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At first, I am much indebted to and have a great sense of respect for my PhD research supervisor, Dr Rup Kumar Barman, Professor of History, Jadavpur University, currently serving as Vice-Chancellor of Bankura University, for his kind support, diligent efforts, healthy criticism, encouragement, and constructive suggestions, without which this work would have never evolved. In fact, his constant support, both officially and academically, and timely intervention during the last phase of my thesis writing, cannot be explained in words. Without that, I would not be able to turn in the thesis on time. I am really grateful to him.

I am also grateful to my RAC members, Professor Kaushik Roy and Professor Nupur Dasgupta, for their kind support and valuable inputs in developing my thesis. They have always been instrumental in helping me for the betterment of my research.

I would also like to convey my thanks to the staff of the National University of Singapore (NUS) Central Library, especially Mr Jie Feng, for his extended support in arranging various unpublished theses/dissertations and records of the NUS and granted me access to them. In the Institute of Southeast Asian Studies, Singapore (ISEAS), I received overwhelming research support from the staff, especially Ms Selvi, who saved my precious time by reserving my requested files and records separately in advance before my visit. Thanks also to the staff of the National Archives of Singapore and the National Library of Singapore for providing me with the archival records and company records. I would also like to convey my regards to the staff of West Bengal State Archives, National Archives of India, Mumbai Port Authority, Bombay Chamber of Commerce, IMC Chamber of Commerce Mumbai, Asiatic Society Bombay, Maharashtra State Archives, Container Corporation of India, Calcutta Chamber of Commerce, Bharat Chamber of Commerce, Bengal Chamber of Commerce (BCCI), Tea Board India, Indian Maritime University, Indian Ports Association (IPA), Indian Maritime University, Central Secretariat Library Delhi, and Prime Minister Library Delhi for providing me the data, files, notes and sources upon which this research stands. However, among all, I am mostly indebted to Mr Sattiki Sarkar and other staff of CRDC, Kolkata Port Trust, for their voluminous support in the last four years by providing archival data and granting me open access to contemporary records. I have benefited from the West Bengal State Government Research Fellowship Award, ICHR, and ICSSR-ERC, which provided financial support for my research. I am deeply indebted to the ICSSR Data Collection Abroad Award, Ministry of Education, for fully supporting my research trip to Singapore to collect archival data.

I have deep regard for all my family members, especially my respected father (late) Sangit Kumar Mukherjee, for whose endeavour and unwavering support I started delving into the world of world history and maritime history. Although he could not see the thesis, I recalled his blessing with each page I wrote. I also extend my profound gratitude to my mother, Labanyamayee Mukherjee, and my junior brother, Rudradip Mukherjee, who have been instrumental in all my successes and have supported me whenever I considered it necessary. This research would not have

attained its current form without their endorsement, affection, emotional, and moral support. I also appreciate the support from my wife, Mrs Mousumi Periwal, for her valuable suggestions and help during this research. Her constant encouragement helped me overcome several challenges and obstacles that I faced during my seven years of research and drove me to the vast world of hope, optimism, and enthusiasm. Special thanks also to the energetic boy Raviranjan Sinha, who is a B.Tech student of the Indian Maritime University and helped me a lot with researching on campus. I extend my gratitude to my friends Suvasish Chakraborty, Sanatan Soren, Syed Md Samiuddin, Sandip Malick, Amrita Karmakar, Prosenjit Naskar, and Sneha Bhakta for their kind support. Last but not least, special thanks also go to my teachers of the Faculty of History at Jadavpur University for their exciting questions and cooperation during my research journey.

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GLOSSARY & TERMS OF REFERENCE

1. ***Baniyas:*** native Indian merchants engaged in trade
2. ***Banjara***: mobile indigenous merchant
3. ***Bosak***: An Indian local businessman, mostly based in early modern Bengal
4. ***Bridgehead:*** generally refers to a point/location of strategic importance on a coast/island in the pre-colonial era
5. ***Bulk Carriers:*** A vessel carrying dry, liquid, grain, not packaged, bundled, or bottled cargo, and is loaded without marks, numbers, or count
6. ***Cash Flow:*** movement of money into and out of a company/institution/organisation over a certain period of time
7. ***Container Freight Station:*** Consolidation depots where parcels of cargo are grouped and loaded into containers.
8. ***Deadweight Tonnage (DWT):*** The total weight tons of cargoes, stores, and bunker fuel that a vessel can carry and transport.
9. ***Demurrage:*** A charge on the ship/shipowner/shippers imposed by the port authority due to failure of loading/unloading of cargo within the allotted free time
10. ***Dry Cargo:*** Cargo that does not require temperature control.
11. ***Dry Dock:*** An enclosed area where a ship is taken to be cleaned and repaired underwater.
12. ***Dwell Time:*** the number of days that a container changed from one status to another, e.g., from inbound load to empty available to outbound load. The shorter the dwell time, the more efficient the container utilization will be.
13. ***Economy of scale:*** in shipping, it is regarded as a profit indicator in which the cost of a cargo/TEU is decreased by reducing both its fixed and operating costs. For example, the larger the ship size, the less fuel it consumes, resulting in reduced freight costs.
14. ***Embeddedness***: a term that refers to a system in which the economy is guided by the non-economic institutions such as religion, clan, kinship, caste, politics, and societal structure.

15. ***Emporium***: a term often used by historians to denote a centre of international trade and exchanges of goods, commodities situated between the trade routes—mostly maritime— of two or more civilisation in ancient times
16. ***Entrepot trade:*** a trade system where a country or a port imports items for re-export to other destinations and not for domestic or internal consumption
17. ***Feeder Vessel:*** A ship that usually travels short distances to pick up or drop off cargo and containers between major ports in an area and smaller ports.
18. ***Full Cellular Ship:*** A ship that is fully designed to transport only the containers inside of all of the available space in both below and above deck vertically.
19. ***Ghat:*** Landing place in a river
20. ***Inland Container Depot/Dry Port:*** a container storage facility located within the country or the hinterland but away from the seaport or waterfront where the shippers prefer to store the TEUs before transporting them to the ports.
21. ***Lascar:*** Maritime worker
22. ***Littoral societies:*** the term coined by historian Michael Pearson to address the countries in and around the Indian Ocean
23. ***Ports of Call:*** an intermediate port where ships customarily stop for supplies, repairs, or transhipment of cargo
24. ***Port performance:*** a port's potential, which includes the rate of cargo handling, turn-round of ships, utilization of port facilities, berth occupancy, etc.
25. ***Sareng:*** Native maritime people
26. ***Seth:*** Native moneylenders
27. ***Stevedore:*** a professional and trained person for cargo loading work at a port
28. ***Tindal:*** Native person in command of a ship
29. ***Turn-round of ships:*** total time a ship/vessel spends at a port for loading and unloading of cargo
30. ***Wharf:*** A Structure built alongside the water or perpendicular to the shore where ships berth for loading or discharging goods.
31. ***Wharfage:*** The charge that an owner of a facility charges for the movement of cargo through that facility.

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ABBREVIATION

ADB	Asian Development Bank
APL	American President Lines
ASB	Asiatic Society Bombay
ASIC	Association of Shipping Interest in Calcutta
BCC	Bombay Chamber of Commerce
BCCK	Bharat Chamber of Commerce (Kolkata)
BCCI	Bengal Chamber of Commerce and Industry
BIS	British Indian Steam Navigation
BPT	Bombay Port Trust
CCC	Calcutta Chamber of Commerce
CDS	Calcutta Dock System
CFS	Container Freight Station
CONCOR	Container Corporation of India
CPT	Calcutta Port Trust
ECAFE	United Nations Economic Commission for Asia and the Far East
ESCAP	Economic and Social Commission for Asia and the Pacific
EU	European Union
GATT	General Agreement on Tariffs and Trade
HDC	Haldia Dock Complex
ICD	Inland Container Depot
IDI	International Development Institution
IIFT	Indian Institute of Foreign Trade
IIMA	Indian Institute of Management Ahmedabad
IMC	Indian Merchants Chamber of Commerce
INSA	Indian National Shipowners Association

IPA	Indian Ports Association
ISEAS	Institute of Southeast Asian Studies, Singapore
KPTMA	Kolkata Port Trust Maritime Archives
MOU	Memorandum of Understanding
MPA	Maritime and Port Authority of Singapore
NAI	National Archives of India
NAS	National Archives of Singapore
NLS	National Library Singapore
NOL	Neptune Orient Lines
NUS	National University of Singapore
P&O	The Peninsular and Oriental Steam Navigation Company
PSA	Port of Singapore Authority
PSA	Port of Singapore Authority
SCI	Shipping Corporation of India
SSNC	Scindia Steam Navigation Company
TBI	Tea Board India
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
WBSA	West Bengal State Archives

INTRODUCTION

INTRODUCTION

➢ Background of the Research

In the postwar world, one of the major changes that took place in the fields of international business and economics was the structural changes in shipping. These include the technical modernisation of infrastructure, the size of the fleets, changes in the composition of traded commodities, and, after all, the institutional mechanisation of ports. The introduction of containers in maritime trade since the 1950s, which is being called "transnational capitalism," represents the most significant technological and organisational rupture in maritime transport. It not only transformed the field of oceanic transportation but also equally reshaped the global economic nexus, trade growth, and prosperity of the nations. While the expansion of containerisation in the West started in the 1950s, developing countries in Asia started to implement it in the 1970s and 1980s.

This research focuses on the expansion, development, and implementation of containerisation, or container technology, in the Indian Ocean arena from a historical perspective, taking its peak period of growth from the 1960s to the 2000s. With a case study of three major international ports, this research contains *four* different yet interlinked aspects: First, it examines how countries and national governments have paid considerable attention to this new technology. Second, my second area of study is the various Non-State Actors (NSAs) that include the Port Trusts, European international shipping companies, exporters, importers, and various Chambers of Commerce throughout Asia that responded to the implementation of container technology and modernisation in shipping. Third, it also considers assessing the role of various international actors and their recommendations, expert advice, and contributions to make the containerisation project successful in Asian ports. These include various transnational banks, study groups, European development institutions, and some global maritime institutions. Fourth, along with the historical account, this research makes an effort to assess how, and to what extent, the use of containers has affected transport costs in maritime trade and business in Asia. By and large, this project seeks to explore the *globalisation* of shipping in the developing world from the below-nation-state level in

the days of worldwide adoption of import substitution and Europe's role in postwar Asian maritime transformation.

From historic times, ports of the Indian Ocean played an important role in world maritime history. They created the world's largest long-distance merchant networks, formed merchant communities, built financial institutions and international monetary credit systems and spread civilisations, cultures or ideas across the globe. From the eighteenth century, European powers, especially the British, hegemonised the ocean either by destroying its former ports or creating new ones. Later, the transport revolution of the nineteenth century and the sudden fall of transport costs dramatically created a big opportunity for world maritime trade. Since this time, ports of the Indian Ocean were rebuilt, and within decades they gained an institutional character in order to fulfil the overgrowing demands of maritime trade. The ports not only created global networks of trade but also opened the doors of opportunity for international labour markets to many Indian and Asian native people. Economists like Ronald Findlay and Kevin O'Rourke assumed that trends of world maritime connectivity in business and cultural exchanges suddenly dropped due to the effects of the First World War (WWI).[1] This assumption proved to be true when the Japanese navy in the First World War attacked the Madras port. Trends of maritime threat continued till the end of 1945 with the arrival of German cruiser *Emden* in the Indian Ocean. *Emden* made an important threat to the ports of the Indian Ocean. The Calcutta port was bombarded twice in the Second World War (WWII). Meanwhile Great Depression of 1929 decreased the volume of world consumption, which resulted in a 30% fall in world trade.

However, such a hypothesis needs to be reevaluated. Between the interwar periods, ports of the Indian Ocean worked as an easy point of departure for nationalists, freedom fighters, poets, leaders and pilgrims. Mark Ravinder Frost shows us how these trends of the movement of people continued on the Indian Ocean in the twentieth century. He called this movement of people, ideas, newspapers and books the 'empires of letters' circulated by the imperial sea-mail service that successfully created an *imagined community* or a 'cosmopolitan discourse'.[2] The ports of the Indian Ocean in the twentieth century acted as the creators of Asian human history by the exports of these 'empires of

[1] Ronald Findlay, and Kevin O'rourke: *Power and Plenty: Trade War, and the World Economy in the Second Millennium*, (New Jersey: Princeton University Press, 2007).

[2] Pamila Gupta, et.al(ed), *Eyes across the water : navigating the Indian Ocean*, (Pretoria: Unisa Press, 2010).

litters'. Examples of such history may be cited here, like the events of the Singapore Mutiny in 1915, in which some Indian emigrant merchants were involved. This passenger traffic or human movement even continued after the 1940s. In 1963-64, overseas passenger traffic from the port of Bombay was 76,000 embarking and 78,000 disembarking. Today, the ports still act as the point of departure for *hajj* pilgrims and labour for Middle Eastern ports such as Jeddah or Mecca. Until 1993, the port of Bombay carried almost 10,000 passengers on the Mumbai-Andaman route. The number of coastal passengers handled by this port is about one lakh a year.

After 1945, many countries around the Indian Ocean gained independence, and as a result, immigrants in several countries faced serious problems. In many countries, they were forcibly expelled, such as the expulsion of Indians, most notoriously from Uganda in the 1970s. Many of them returned to their home. This is called a 'second migration', and at that time, ports of the Indian Ocean again acted as the point of departure.

Apart from human movement, commercial shipping also increased after decolonisation, or the era of globalisation. The Indian Ocean again became the centre of the global economy. Between 1977 and 1987, ships belonging to the European Union fell from 30% to 17%, Britain from 22% to only 2%, and the USA from 33% to 5%. In 1972, only 20% of port activity took place in Asia. By 2009, Asia accounted for more than 50% of global port activity, thus dramatically changing this picture.[3] However, the effects of 9/11 again caused a fall in maritime trade as it challenged the maritime and port security issues. Modern maritime technology also had an impact on Indian Ocean ports. Before containerisation, the Port of Colombo served as the main hub of the Indian Ocean. In 1992, when Mumbai built JNPT especially for the service of containerisation, it replaced Colombo as the central hub in the ocean. Therefore, the Indian Ocean arena after the Second World War became both the centre of world shipping and international politics through the rapid modernisation of seaports and growth of national shipping companies and shippers' councils, as well as geopolitical tensions among nations.

- **Survey of Published Secondary Literature**

[3] Jari Ojala and Stig Tenold (eds), 'Maritime trade and merchant shipping: The shipping/trade ratio from the 1870s until today', Discussion paper, Department of Economics, Norwegian School of Economics June 2016) pp. 1-15.

The conventional approach in academia held the view that twentieth-century maritime shipping had less importance in international and national economics than it had in the last half of the nineteenth century. Since the introduction of air traffic in the 1960s challenged the maritime shipping sector, research on ports and their role in world shipping has not yet received ample attention. Though this tradition has recently been challenged.

Approach towards research on the ports of the Indian Ocean in twentieth-century shipping and human exchange has not yet started in academia, though the Indian Ocean is now becoming the centre of global economics and geopolitics. Some decades earlier, maritime historians/economists worked and wrote a bit about the colonial ports of the Indian Ocean. Dilip K. Basu edited *The Rise and Growth of the Colonial Port Cities in Asia (1985),*[4] and Indu Banga's edited volume *Ports and their Hinterlands in India (1700-1950),*[5] published in 1992, was one of those examples. Australian Maritime historian Frank Broeze's edited book, *Gateways of Asia: Port Cities of Asia in the 13th-20th Centuries,* is a notable addition to the port historiography.[6] It is a comprehensive study of Asian ports and port cities taken together. But these works are mainly concentrated on the non-shipping sector, such as urbanisation, the impact of ports on the city and culture, etc. Ports of the Indian Ocean in global shipping again gained little importance. Prof. Mukherjee, in his book *The Port of Calcutta: A Short History,* has written a short but highly admirable and recommendable history of the Calcutta port from its origin.[7] Writing on Bombay port is also confined within the nineteenth century, e.g. 'Bombay and the Famine of 1803-04: the Food supply and public order in a colonial port city', a book chapter by Mariam Dossal. Works of Animesh Ray and Sadanand Gupta had concentrated especially on the role of Indian ports after 1947. Both of their works mainly focused on the Indian ports and shipping sector. But most of these works are associated with the local issues and especially the discussion after 1945, and the effect of globalisation on the ports of the Indian Ocean is still totally uncovered. There are some important research works on the twentieth-century Indian Ocean in social history on the

[4] Dilip K. Basu (ed), *The Rise and Growth of the Colonial Port Cities in Asia,* (Santa Cruz: Center for South Pacific Studies, University of California, 1985).

[5] Indu Banga(ed), *Ports and their Hinterlands in India (1700-1950),* (New Delhi: Manohar Publishers and Distributors, 1992).

[6] Frank Broeze (ed), *Gateways Of Asia: Port Cities of Asia in the 13th-20th Centuries*, (London: Routledge, 2013).

[7] Nilmani Mukherjee, *The Port of Calcutta: A Short History,* (Calcutta: Commissioners for the Port of Calcutta, 1968).

topic of migration, movement of people and ideas, maritime labour, but the context of ports is again cleverly avoided.

Relatively, research on South-East Asian ports in twentieth-century shipping has received more attention from historians and economists. Kith Trace, in his paper, 'ASEAN Ports Since 1945: Maritime Change and Port Rivalry,' has discussed the impact of globalisation on East Asian ports.[8] Two recently published books where doors for the research on ports as a theme of comparative international history are opened are, *The Asian Mediterranean: Port Cities and Trading Networks in China, Japan and Southeast Asia 13th-21st Century* where the author has compared the ports of Asia with the Mediterranean ports and asserts a view that ports are an independent unit for international economics rather than as a gateway to a nation.[9] The other is *Commodities, Ports and Asian Maritime Trade Since 1750,* which discusses the role of Asian ports in the context of wider intra-oceanic trade.[10]

Business historians' choice to depict the evolution of international trade and business concentrated mainly on the structure of business organisations and how changes in organisational structure resulted in global trade. Although they published several notable works, the literature has two basic shortcomings: First, most business historians have worked a lot on the period between the 19th and early 20th centuries. Their focal point is colonial trading systems. Consequently, the aforementioned works did not effectively elucidate the post-1945 transformations, particularly pertaining to the technological advancements in international business that include the introduction and development of containerisation. Second, they paid little interest in how the structural and organisational changes of the firms and institutions impacted international shipping and never paid interest in Asian shipping at all.

On the other hand, political scientists and scholars tend to focus more on the issue of modernisation and infrastructural changes in shipping after 1945, but their area of discussion revolves around the question of international maritime *governance* and more on the role of multiple state or non-state actors, local, regional or international organisations facilitating maritime governance. The analysis connects two major areas-

[8] Kith Trace, 'ASEAN Ports Since 1945: Maritime Change and Port Rivalry' in Frank Broeze (ed), *Gateways of Asia*, op.cit.,pp.318-338.

[9] François Gipouloux, *The Asian Mediterranean: Port Cities and Trading Networks in China, Japan and Southeast Asia 13th-21st Century, (Cheltenham: Edward Elgar, 2011).*

[10] Ulbe Bosma, et.al(eds), *Commodities, Ports and Asian Maritime Trade Since 1750* ,(London: Palgrave Macmillan, 2015).

globalisation and the growth of the 'conglomeratic nature of maritime governance'. They consider containerisation in maritime shipping as a vital tool of globalisation. However, their research is unable to tell us how such a technological tool of globalisation became a reality in international shipping.

Also, academic research and study on the postwar modernisation of Asian ports is still lacking. It is found that most of the groundbreaking works on Indian economic history or maritime history did not pay adequate attention to Indian Ocean ports or the Indian Ocean trade, especially after 1945. Historians who have written on India's economic history after independence have stressed two issues: the agricultural transformation, that is, the Green Revolution, and, to some extent about the state's industrialisation. Although historian Tirthankar Roy assumes that the globalisation in India had started slowly since the 1970s, he calls it "small opening".[11]

Since the beginning of the twenty-first century, some authors have begun writing the economic and social history of containerisation through academic publishing. Three authors are at the top: Levinson, Gudahy, and Broeze. Levinson's pioneering work on the history of containers, *The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger,* for the first time wrote the complete history of container technology since its inception in US maritime shipping.[12] Levinson's *The Box* tells the story of political economy, economic geography, technology, ports, harbours, and labour relations through the use of large primary data from different archives. However, the author was concerned only with the growth of container shipping in the Western Hemisphere, and as the title of his work indicates, *The Box* paid more attention to the consequences of container technology on the world economy and said almost nothing about the various forces behind containerisation. Levinson's 500-page book barely mentions developing countries (for example, India was mentioned only once in the index). And almost 90% of the sources he used are US-based sources. In the same year that Levinson's work was published, another author, Brian Cudahy, published a book on the history of containers. Like Levinson, Cudahy's work, *Box Boats: How container ships changed the world,* which starts the story just before World War II, describes the container development in the Western world and does not pay attention to the East.[13] It is Lance

[11] Tirthankar Roy, *Business History of India*, (New Delhi: Cambridge University Press, 2018).
[12] Mark Levinson, *The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger*, (Princeton: Princeton University Press, 2016).
[13] Brian Cudahy, *Box Boats: How Container Ships Changed the World, (New York: Fordham University Press, 2006).*

Hoovestal's work that stands exception among the published literature on containerisation. His work titled *Globalisation Contained* examined the development of containerisation since the Second World War, but more importantly, this work paid particular attention to the focus on the growth of this new technology in the Far Eastern world and comparatively revealed how this new technology impacted the international relations of two antagonist blocs, the United States and China. However, the narrative that the author adopted revolved chiefly around various ideologies and theories of international relations and therefore, the story of historical development is missing in the pages.[14]

The general proclivity for disseminating the progress of containerisation in developing regions is not only attributed to specialisations such as business history or international shipping but is equally tied to the vast generalisation of maritime history, such as the history of the oceans or the maritime history of the world. Three references are the most suited. Among the latest are Lincoln Paine's *Sea and Civilization: A maritime history of the World.*[15] Paine emphasises the effects on stevedores and waterfronts, the transformation of ports due to containerisation, and the strategic challenges he refers to as "insoluble obstacles" hindering containerisation expansion, with a focus on US ports. However, he acknowledges Singapore's success as one of the busiest container ports, but historical development is almost missing in the discussion, and he laments, "Global figures are not available" (?). Basically, like other works, the discussion of the eastern hemisphere in Paine's book comes only when the author talks about container shipping routes. Quite similarly, Professor David Abulafia, in his monumental study *The Boundless Sea: A Human History of the Oceans*, provides a conventional account of containerisation, citing its roots in US transportation as well as its growth and worker concerns. While he does touch on the various problems and concerns facing post-war Singapore, including shipping, port infrastructure, and trade, the discussion primarily centres on political matters.[16]

Therefore, a close look at the above secondary works reveals some basic gaps. First, existing books are West-centric. Little has been paid to postwar Indian Ocean ports, especially to the South Asian region. Second, much more emphasis has been paid

[14] Lance E. Hoovestal, *Globalization Contained: The Economic and Strategic Consequences of the Container, (New York: Palgrave Macmillan, 2013).*

[15] Lincoln Paine's *Sea and Civilization: A Maritime History of the World,* (New York: Vintage Books, 2013).

[16] David Abulafia, *The Boundless Sea: A Human History of the Oceans,* (Oxford: Oxford University Press, 2019).

from the point of economic and management perspective than from a historical approach. Third, these works generally lack archival/primary source-based research. And last, these works failed to justify the impact of modernisation on Asian maritime trade and economy.

The study of ports and their wider mechanism, like networks, trade, commerce and to some extent, administration—typically known as 'port history'— is gradually becoming popular in general maritime history, blue economy, and development studies. In fact, for the researchers, studies on ports and its associated/amalgamated lobbies is considered to be a sharp door to enter into maritime history/studies. In India, maritime history has had its roots from very early on. Imperialist history writings gave birth to the nationalist history, and national history writings gave birth to maritime history. The so-called imperial historians and their published works on Asian/Indian history became a source of support for British imperialism and colonialism in Asia and often helped to legitimise the British rule in the subcontinent. It was common in their writings to impose the concept of a stagnant society while writing about Asian history. Their historical writings and storytelling tended to portray the Asian society as old, unchanging, tied to religious morals, and full of superstitions. One of the main ideas of this imperialist school was to deny that Asian countries had any contact with other countries so that their claim—that Asia was a static society—could be completely proven.

For example, most of the imperial historians disregarded the history of intercourse between India and the Western world, dating back to the days when the Roman Empire reached the pinnacle in its trade with India. This is perfectly revealed when maritime archaeologists discovered many South Indian ports that served as significant ports in the Indo-Roman trade; imperialist historians vehemently denied their claim, invoking inflexible and strange arguments. One of their well-known and unfair claims was that Roman traders came to India because of Roman interest. They argued that India, due to its self-sufficiency, never wanted to establish trade and business relations with the Roman Empire.[17] However, this argument was later contested by many Indian nationalist historians who successfully documented India's long and rich history

[17] H. G. Rawlinson, *Intercourse Between India and the Western World,* (Cambridge: At the University Press, 1916); E. H. Warmington, *The Commerce Between the Roman Empire and India,* (Cambridge: At the University Press, 1928); M. Wheeler, *Rome beyond the Imperial Frontier,* (London: Bell, 1954); one of the examples of the scholarship that depicted India's cultural greatness and overlapped India's external trade and influence upon overseas societies is, A. L. Basham, *Cultural History of India,* (Oxford: Oxford University Press, 1975).

of intercourse and cross-cultural exchange with the outside world, even long before the beginning of Indo-Roman trade.[18] Thus, the trend of writing India's maritime history has shifted from the subset of imperial historians into the group of Indian historians who systematically documented the glorious past of India's engagement with the wider maritime world.[19]

However, before venturing into the vast world of port history literature, it is essential to discuss the nature and scope of maritime history. Maritime history delves into the exploits of those who traversed the high seas and oceans throughout history. It is therefore a history of human engagement with oceans and seas that encompasses maritime commerce, shipbuilding technologies, the lives and activities of maritime merchants such as sailors and seamen, as well as boatmen and fishermen who had a close connection with the water world. Maritime history depicts the land-sea interaction. It also covers the interplay of diverse communities along an ocean's or sea's shore. 'Littoral societies' are sometimes referred to as such by modern historians. However, scholars of maritime history have varied concepts when it comes to the definition and nature of maritime history. The majority of maritime historians opine that maritime history embodies the terms "international" and "global" in scope, regarding both the nature and the extent of its coverage. The names that stand out first are Michael Pearson, David Abulafia, Jerry H Bentley, Frank Broeze, N. A. M. Rodger, Gelina Harlaftis, Ashin Dasgupta, and Rila Mukherjee.[20] Professor Broeze claims that maritime history necessarily spans national boundaries.[21] Hester Blum claims that sailors were

[18] Among them, one of the best scholarships was Radhakumud Mukherjee, *Indian Shipping, A History of Sea-Borne Trade and Maritime Activity of the of the Indians from the Earliest Times* (Bombay: Longmans, Green and Co., 1912).

[19] This debate is greatly discussed with enormous reviews of old and recent scholarships in *Trade in Early India*, ed. Ranabir Chakravarti, (Delhi: Oxford University Press, 2010).

[20] Among the authors who have expressed their views that maritime history is international or global in nature are David Abulafia, "Mediterranean History as Global History", *Holberg Prize Symposium,* 2010 Lecture series; Jerry H. Bentley, Renate Bridenthal and Karen Wigen (eds), *Seascapes: Maritime Histories, Littoral Cultures, and Transoceanic Exchanges,* Reprint edition, (Honolulu: University of Hawai'i Press,2016); Maria Fusaro and Amélia Polónia (eds), *Maritime History as Global History*, (Liverpool: Liverpool University Press, 2010); *The Globalisation of the Oceans,* ed. Frank Broeze, (Newfoundland: International Maritime Economic History Association, 2002); Daniel Finamore, *Maritime History as World History, (* Florida: University Press of Florida, 2008); *Networks in the First Global Age: 1400-1800*, ed. Rila Mukherjee, (New Delhi: Primus Books, 2011); *Oceans Connect: Reflections on Water Worlds Across Time and Space*,(New Delhi: Primus Books, 2013); *Trade, Circulation, and Flow in the Indian Ocean World,* ed. Michael Pearson (London: Palgrave Macmillan, 2015).

[21] Frank Broeze (ED), *Maritime History at the Crossroads: A Critical Review of Recent Historiography*, (Newfoundland: International Maritime Economic History Association, 1995).

undoubtedly "international by definition".[22] The well-known journal *International Journal of Maritime History* has been instrumental in fostering the growth of a more international or global perspective among maritime historians. This has been accomplished through the publication of numerous articles in the journal that have a global approach. However, the editor of this journal asserted that contemporary maritime history literature is increasingly focused on local/regional concerns.[23] By and large, maritime history is an academic field that helps us understand the history of complicated interactions between people and oceans and seas over time and space. It could be global or worldwide, depending on the topic it covers, such as the history of seafaring or maritime trade. On the contrary, the history of fishermen or boatmen on the Ganges or the Bay of Bengal may represent national or regional history. Maritime history covers a lot of time and place, whether it has a global or regional approach.

'Port History' is commonly regarded as an essential pathway into the study of maritime history/studies. Historically, ports have functioned as a junction for individuals of diverse religions, cultures, and ethnicities. On one hand, a port serves as a vital hub for international trade and maritime transportation. On the other hand, it brings together diverse societies and cultures into a unified system: the network of commerce and trade. A port also serves as a location where individuals nurture a sense of belonging within a multicultural community. Throughout history, the world's oceans have undergone a diverse range of human interactions. The history of a port illuminates such interactions effectively. While port studies are essential for understanding maritime trade and merchant shipping within the context of contemporary Indian Ocean history, they are equally vital for exploring other significant aspects of human history, such as long-distance labour migration, diasporas, emigration, human movement, and environmental research. During colonial periods, imperial ports in the Indian Ocean functioned as departure points for a diverse array of individuals: enslaved persons and labourers, traders, merchants, transporters, government officials, authorities, and numerous nationalist leaders, among others. Therefore, research into port history has the potential to reveal an abundance of fascinating insights into the human history of the world's oceans and seas.

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[22] Hester Blum, *The View from the Masthead: Maritime Imagination and Antebellum American Sea Narratives,* (Chapel Hill: University of North Carolina Press, 2008).

[23] For a concise description of this debate see, Joshua M. Smith, "Far Beyond Jack Tar: Maritime Historians and the Problem of Audience", *CORIOLIS, Vol. 2, No. 2*, 2011, pp.1-11.

If we care to read the works of maritime historians, we find that their works cover almost every important aspect of maritime history, such as naval history, maritime shipping, sailors, shipbuilding, navigational technology, and oceanic interaction. Ports, on the other hand, did not get ample attention. A brief survey of the literature on maritime history in both Indian and Western contexts could help address this issue further.

W. H. Mooreland was a notable economic historian of pre-colonial India. His works on Indian history first sparked an interest in the maritime trade of India in the pre-colonial period. In some of his best-known writings, he included chapters on the Indian Ocean shipping/trade.[24] Professor Mooreland hypothesised that before the Europeans arrived in the Indian Ocean, Indian/Asian maritime trade was skimpy and unremarkable in magnitude. Later, J. C. Van Leur, a well-known historian of South-East Asian maritime trade, best known for his 'Pedlar Thesis', went against Mooreland's views and started researching the indigenous Indian Ocean merchants. He published extensively on the topic and was able to establish a new history of the nature and character of Asian maritime merchants. *Indonesian Trade and Society* is one of his most well-known writings. Even though he addressed several novel concerns about the structure and form of the Indian Ocean trade in this work, he did not devote enough attention to the role of Indian Ocean ports in the overall picture.[25] In an influential book, *Asian Trade and European Influence*, M. A. P. Meilink Roelofsz went into considerable depth about the maritime trade of the Dutch and Asian merchants; however, important ports of the Indian Ocean were again left out of her discussion.[26] Professor Radhakumud Mukherji wrote a rudimentary book on Indian shipping and maritime commerce.[27] This work is still considered an outstanding contribution to India's maritime past and is highly cited by recent scholars. However, Mukherji limited his account solely to describing maritime commerce and cargo operations. Yet, there has been little information on ancient Indian seaports. In this context, Ashin Dasgupta was undoubtedly the foremost historian who devoted substantial attention to ports.

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[24] W. H. Mooreland, *India at the death of Akbar. An Economic Study* (London: Macmillan and Co., 1920)*; From Akbar to Aurangzeb: A Study in Indian Economic History* (London: Macmillan & Co. 1923).

[25] J. C. Van Leur, *Indonesian Trade and Society: Essays in Asian Social and Economic History* (The Hague: W. Van Hoeve, 1955).

[26] M. A. P. Meilink-Roelofs, *Asian Trade and European Influence In the Indonesian Archipelago between 1500 and about 1630,* (Hague: Martinus Nijhoff ,1962).

[27] Radha Kumud Mookerji, *Indian Shipping: A History of the Sea-Borne Trade and Maritime Activity of the Indians From the Earliest Times*, (London: Longmans, 1912)

His ground-breaking work titled *Indian Merchant and the Decline of Surat* is considered to be a highly esteemed piece of research in academia and stands as a benchmark in Indian Ocean maritime historiography.[28] In this work, Professor Dasgupta has discussed various causes and the contemporary political climax that led to the decline of Surat, the main outlet/port of Mughal India. However, it is to mentioning that ports are explicitly marginalised in his later works. On the other hand, Historians and Indian Ocean history researchers have frequently overlooked the Bay of Bengal. Even people who have written research papers, books, and essays about it have skipped over its main ports, which include Madras, Visakhapatnam, Pulicat, Calcutta, and Chittagong.[29] Not even the best and widely circulated works on Indian economic history have a chapter on Indian Ocean ports. For instance, *The Cambridge Economic History of India (vol. 2)* has several chapters on railways, irrigation, banking, foreign trade, national income, population, and other issues. However, it did not have a chapter on marine trade or Indian ports.[30] Tirthankar Roy's acclaimed and popular work on Indian economic history also has only a few paragraphs about Indian ports.[31] This same representation can be seen in various books about the history of Indian commerce and economics. They draw a very similar picture.[32]

The historiography of Bengal's trade and commerce is another area in which the seaports received scant attention. These include various published works and articles of R. C. Majumder, N. K. Sinha, Amalesh Tripathi, Sushil Chaudhuri, Barun Dey, Sugata

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[28] Ashin Dasgupta, *Indian Merchants and the Decline of Surat*, (Wiesbaden, Franz Steiner Verlag, 1979); *The World of the Indian Ocean Merchant, 1500-1800,* (New Delhi: Oxford University Press, 2001).

[29] Two major contributions to the study of the Bay of Bengal are, Sanjay Subrahmanyam, *Portuguese Trade and Settlement in the Bay of Bengal, 1500-1700,* (Delhi: Oxford University Press, 1991); and Rila Mukherjee, *Strange Riches: Bengal in the Mercantile Map of South Asia*, (New Delhi: Foundation Books, 2006); but both the contributors avoided the port issue.

[30] Dharma Kumar (ed), *Cambridge Economic History of India, vol: II,* Reprinted expanded edition, (New Delhi, Orient Longman ,2008).

[31] Tirthankar Roy. *The Economic History of India 1857-1947*, (New Delhi: Oxford University Press, 2012); Here, Professor Roy avoided developing seaports while discussing colonial India's infrastructures.

[32] To compare this issue in standard economic history books, readers could see Sabyasachi Bhattacharya, *The Financial Foundations of the British Raj* : *Ideas and Interests in the Reconstruction of Indian Public Finance 1858-1872*, Reprint edition, (New Delhi: Orient BlackSwan, 2005); *Oupanibeshik Bharater Arthaniti,* (in Bengali), (Kolkata: Ananda Publishers Private Limited, 2015); *Essays In Modern Indian Economic History*, (New Delhi: Primus Books, 2014); B. R. Tomlinson, *The Economy of Modern India, 1860-1970*, Reprint edition, (New Delhi: Cambridge University Press, 2005); S. N. Pandy, *Economic History of Modern India: 1757-1947,* (New Delhi: Readworthy Publications Pvt Ltd, 2008), Irfan Habib, *Indian Economy 1858-1914, A people's History of India*, vol.28, (New Delhi: Tulika Books, 2008); Dietmar Rothermund, *An Economic History of India*, Second edition (New York: Routledge ,1988).

Bose, and S. Bhattacharya.[33] Even Tilottama Mukherjee's very recently published scholarship on Bengal trade and commerce fails to give the ports of Bengal adequate consideration they need.[34] Bhaswati Bhattacharya's essay "Ports, Hinterlands and Merchant Networks: Armenians in Bengal in the Eighteenth Century" focused on ports to a lesser extent. In this essay, the author went into great detail about how the Armenian merchant networks helped build the intricate connection between the ports and the hinterland. But the author put the merchants at the forefront of the discussion and focused on them far more than on how ports were being modernised.[35]

A comparable neglect of port history is seen in the maritime and economic historiography of Western Europe. Even though there have been a lot of significant works written about the history of the Mediterranean and North Sea, none of them have focused on the port as a main point of discussion. Economic historians, such as Henri Pirenne, Robert S. Lopez, Alfons Dopsch, Robert Latouche, M. M. Postan, Georges Duby, Norman Pounds, Steven A. Epstein, and Jacques Le Goff, who have written extensively about the structure and growth of the European economy, have largely overlooked or have been under-researched the European ports.[36] It is only Professor Michael McCormick who, in his latest *magnum opus* titled *Origins of the European Economy: Communications and Commerce AD 300 – 900*, devoted sufficient attention to the

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[33] In most of the trade and economic history books of modern Bengal, the role of the ports in Bengal's economy is always a subject of negation. For example see N. K. Sinha, *The Economic History of Bengal*, 3 vols, (Calcutta: Farma K. L. M. Mukhopadhyay, 1970); Amales Tripathi, *Trade and Finance in the Bengal Presidency*, 1793-1833, Second edition, (Calcutta: Oxford University Press, 1980); Sushil Chaudhury, *Trade and Commercial Organization in Bengal*, 1650-1720, (Calcutta: Firma K. L. Mukhopadhyay, 1975); *From Prosperity to Decline*: *Eighteenth Century Bengal*, (Delhi: Manohar Publishers and Distributors, 1995); P. J. Marshall, *Bengal: The British Bridgehead Eastern India 1740-1828, The New Cambridge History of India, II.2*, (New Delhi: Cambridge University Press, 2006); Sugata Bose, *Agrarian Bengal: Economy, Social Structure and Politics, 1919-1947*, First edition, (Cambridge: Cambridge University Press, 2007).

[34] Tilottama Mukherjee, *Political Cultural and Economy in Eighteenth-Century Bengal: Networks of Exchange, Consumption and Communication*, (New Delhi: Orient Blackswan, 2013).

[35] Tsukasa Mizushima, George Bryan Souza and Dennis O Flynn (eds), *Hinterlands and Commodities: Place, Space, Time and the Political Economic Development of Asia over the Long Eighteenth Century,* (Leiden: Brill Academic Publishers, 2014).

[36] Henri Pirenne, *Economic and Social History of Medieval Europe*, (Florida: Harvest Books, 1956); Robert Latouche, *The Birth of the Western Economy: Economic Aspects of the Dark Ages, (*London*:* Methuen & co., 1967); Robert S. Lopez, *The Commercial Revolution of the Middle Ages, 950-1350*,(Cambridge: Cambridge University Press, 1976); Georges Duby, *The Early Growth of the European Economy: Warriors and Peasants from the Seventh to the Twelfth Century* (New York: Cornell University Press, 1978); Jacques Le Goff, *Time, Work, and Culture in the Middle Ages*, (Chicago: University Of Chicago Press, 1982); M. M. Postan, *The Cambridge Economic History of Europe, Vol. II: Trade and Industry in the Middle Ages*, (Cambridge: Cambridge University Press, 1987); Norman Pounds*, An Economic History of Medieval Europe*, (London: Pearson Longman, 1994); Steven A. Epstein, *An Economic and Social History of Later Medieval Europe, 1000-1500*, (Cambridge: Cambridge University Press, 2009).

importance of the North Sea and Mediterranean ports in determining European economic progress.[37] Modern historians of the Mediterranean, the Atlantic, and the North Sea have provided a brief explanation of the significance of European ports in maritime trade and exchanges, but ports have not been elevated to the centre of their discussions.[38] Professor David Abulafia, a prominent historian of Mediterranean history at Cambridge University, exemplifies this notion effectively. He wrote an incredible book called *The Great Sea: A Human History of the Mediterranean*. While he has a lot to recommend for his explanations and narratives, the only flaw is that he views ports as an 'urban unit' in a sea rather than a 'commercial emporium'. Very Recent publications on Mediterranean and Atlantic history show a similar style to earlier works.[39]

Some modern maritime historians focus their research and writing on ports and the history of ports. Some universities and research centres in Australia are at the forefront in putting ports at the epicentre of research. Some colleges or institutes around the ports are also doing research projects on the history of ports. For instance, the University of Liverpool has set up a special department/research unit just for port studies called The Centre for Port and Maritime History. This research institution has brought out a lot of publications and monographs about ports. A notable one is *Harbours and Havens: Essays in Port History*, edited by Professor Lewis R. Fischer. It goes without saying that this is the first and maybe only book that looks at the major ports of Australia, Asia, Europe, and the Atlantic from the perspective of comparative history. It is acclaimed in the book that "ports were of far greater national importance than the railways or the telegraphs".[40] Another notable work that ought to be mentioned is

[37] Michael McCormick, *Origins of the European Economy: Communications and Commerce AD 300 – 900, (*Cambridge: Cambridge University Press, 2002).

[38] David Abulafia, *The Great Sea: A Human History of the Mediterranean*, (New York: Oxford University Press, 2011).

[39] Archibald R. Lewis, *Naval Power and Trade in the Mediterranean, A.D. 500-1100*, (Princeton: Princeton University Press,1951); *The Northern Seas: Shipping and Commerce in Northern Europe A.D. 300-1100*, (Princeton: Princeton University Press, 1958); *European Naval and Maritime History, 300-1500*, (Indiana: Indiana University Press, 1990); Molly Greene, *Catholic Pirates and Greek Merchants: A Maritime History of the Mediterranean*, (Princeton: Princeton University Press, 2013); Ralph Davis, *The Rise of the Atlantic Economies,(* Ithaca: Cornell University Press, 1973); Thomas Benjamin, *The Atlantic World: Europeans, Africans, Indians and their Shared History, 1400-1900, (*Cambridge: Cambridge University Press, 2009).

[40] Adrian Jarvis, 'Port History: Some Thoughts on Where it Came from and Where it Might be Going', in Lewis R. Fischer (ed), *Harbours and Havens: Essays in Port History*, (Newfoundland: International Maritime Economic History Association, 1999), p.17.

Liverpool and Merseyside: Essays in the economic and social history of the port and its hinterland, which discusses the extensive shipping networks of the port of Liverpool.[41]

In India, the Port History was initiated and amplified mostly by a subset of urban historians. The book *Ports and their Hinterlands in India (1700-1950)* by the finest Indian urban historian, Professor Indu Banga, is a prominent example.[42] Port studies gradually became popular, and several officials of the marine and port sectors conducted studies on Indian ports. Animesh Ray, formerly the port commissioner of Calcutta Port Trust, wrote a book titled *Maritime India: Ports and Shipping*. It has gone to great lengths about the history of Indian ports prior to and following India's independence. He also wrote about the history of Calcutta Port.[43] Sadanand Gupta's newly published book *Shipping Industry In India: Colonialism to Globalisation (A Spatio-Temporal Analysis)* focuses on the history of Indian ports after 1947 and contains more statistics-based research.[44] Frank Broeze's edited book *Gateways of Asia* is, without a doubt, an essential addition to the history of Asian ports.

Very recently, scholars and historians of maritime history started working on Asian port cities. Rila Mukherjee's edited volume *Vanguards of Globalization: Port-Cities from the Classical to the Modern ,* and Professor Yogesh Sharma's edited work, *Cities in Medieval India,* are the two valuable additions, as these volumes contain chapters devoted exclusively to the Indian ports. In *Port Towns of Gujarat*, medieval Indian ports have received ample attention.[45] While all of the publications mentioned above are worthy enough in port studies, they have varied deficiencies; the most significant one is that they refer to Indian ports as 'port cities'. The above works have not given enough attention to the port as an intermodal gateway and how important it is for international marine freight. Also, both the European and American historiography did not consider the ports

[41] J.A.Harris(ed), *Liverpool and Merseyside, Essays in the economic and social history of the port and its hinterland*, (London: Frank Cass & Co. Ltd, 1969).

[42] Indu Banga(ed), *Ports and their Hinterlands in India, 1700-1950*, (New Delhi: Manohar Publishers and Distributors, 1992).

[43] For an extensive history of Calcutta Port and other major Indian ports, see Animesh Ray, *Maritime India: Ports and Shipping*, (New Delhi: Munshiram Manoharlal Publishers Pvt. Ltd., 1995).

[44] Sadananda Gupta, *Shipping Industry In India: Colonialism to Globalisation, A Spatio-Temporal Analysis,* (New Delhi: Pentagon Press, 2016).

[45] *Vanguards of Globalization: Port-Cities from the Classical to the Modern*, ed. Rila Mukherjee, (New Delhi: Primus Books, 2014); *Cities in Medieval India,* ed. Yogesh Sharma, (New Delhi: Primus Books, 2015); *Port Towns of Gujarat*, eds. Sara Keller & Michael Pearson, (New Delhi: Primus Books, 2015).

as institutions. For example, to the contributors of the book *Cities and the Sea: Port City Planning in Early Modern Europe,* ports of Europe have been considered as port cities.[46]

However, a few recently published works have opened the doors for research on port studies and placed a focus on ports for understanding comparative international history. The book titled *The Asian Mediterranean: Port Cities and Trading Networks in China, Japan and Southeast Asia, 13th-21st Century,* examines the similarities and differences between Asian and Mediterranean ports and claims that, unlike being a country's entry point to global commerce, Asian ports are independent centres for international trade.[47] The other one is *Commodities, Ports and Asian Maritime Trade Since 1750,* which has addressed the historical importance that Asian ports played in transoceanic trade. [48] Also, in a recent addition, *Ports in the Medieval European Atlantic, Shipping, Transport and Labour,* the author used extensive archival records and examined many crucial facets of the Atlantic ports and their connection with shipping, trade, and labour.[49] another title, *Empires on the Waterfront: Japan's Ports and Power, 1858–1899,* published by the Harvard University Asia Centre, is another great addition to the field of maritime history. It focuses on Japan's traditional ports and how its imperial power rose and fell during that period. Here, the author Catherine L. Phipps writes about how important the treaty ports were in making Japan a modern nation-state. Japanese scholars have never recognised this kind of attention to the traditional ports before.[50]

India has a long history of trading by sea, and its lengthy coastlines are home to several major and minor ports. In conventional historiography, however, the history of Indian ports is not given as much importance. For example, Calcutta Port, which is now India's major port, didn't get much attention from maritime history. Rila Mukherjee's works on port studies are confined mainly to early modern ports and port cities. Her recently published book on port history has no chapter dedicated to Calcutta Port. Most historians (like C. A. Bayly and P. J. Marshall) tend to consider Calcutta as a metropolis;

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[46] Josef W. Konvitz, *Cities and the Sea: Port City Planning in Early Modern Europe*, (Maryland: Johns Hopkins University Press, 1978).

[47] Francois Gipouloux, *The Asian Mediterranean: Port Cities and Trading Networks in China, Japan and Southeast Asia, 13th-21st Century*, (Cheltenham: Edward Elgar Publication, 2011).

[48] Anthony Webster, Ulbe Bosma and Jaime de Melo (eds), *Commodities, Ports and Asian Maritime Trade Since 1750* (London: Palgrave Macmillan, 2015).

[49] Ana María Rivera Medina (ed), *Ports in the Medieval European Atlantic: Shipping, Transport and Labour*, (Woodbridge: Boydell and Brewer, 2021).

[50] Catherine L. Phipps, *Empires on the Waterfront: Japan's Ports and Power, 1858–1899, (Harvard University Asia Center, 2015).*

in certain cases, they have used it as a significant focus in their writings on urban history.[51] When researchers and historians wrote about the city, they hardly ever referenced Calcutta as an international port. However, thanks to a group of researchers from economics and management studies and the Kolkata Port Trust for publishing some valuable research works on the port of Calcutta. For example, Dr Prajnananda Banerjee, in his book *Calcutta and its Hinterland- A Study in Economic History of India,* wrote about the trade of Calcutta Port in some detail with using sufficient archival/governmental data.[52] *Port and Development: A Study of Calcutta Port in India* is another important work where the author discusses the history of Calcutta Port prior to India's independence.[53] However, Calcutta Port's history has recently been enriched by the addition of a newly published work. One is done by Professor Dr Sunil Kumar Munshi of Burdwan University, who published a book titled *Dynamics of Urban Growth in Eastern India*.[54]. In this book, he contributed a separate chapter on Calcutta Port.

Now, come to the side of port administration. The Commissioners for the Port of Calcutta published a few works on the history of the port. If we see the history, we find that the port trust administration had gone to great lengths to portray the port's paramount significance in Indian history even before independence. The administration of the port published *The Calcutta Port Trust- A Brief History of Fifty Years' Work,* undertaken by S. C. Stuart-Williams, the then commissioner of Calcutta Port Trust. But as expected, this work placed a greater emphasis on the administration of the port commissioners, and maritime/commercial activities of the port were poorly documented. Later, the trustees of the Calcutta Port bestowed a great responsibility to Prof Nilmani Mukherjee of Calcutta University, who was tasked with compiling a complete historical account of the port. Prof. Mukherjee produced a short but very good history of Calcutta Port that covered the time from the foundation of the port and its early history to the

[51] C. A. Bayly, 'Inland Port Cities in North India: Calcutta and the Gangetic Plains, 1780–1900.' In *The Rise and Growth of the Colonial Port Cities in Asia*, ed. Dilip K. Basu: (Santa Cruz: Center for South Pacific Studies, University of California, 1985), pp. 13-18; and P. J. Marshall, 'Eighteenth-Century Calcutta', in Robert J Ross, Gerard J Telkamp and Raymond F Betts (eds), *Colonial Cities: Essays on Urbanism in a Colonial Context,* First edition,(Place of publication not identified, Springer, 2012 In both articles, the authors have treated Calcutta as a colonial city and the results of colonial urbanization.

[52] Prajnananda Banerjee, *Calcutta and its Hinterland, A Study in Economic History of India, 1833-1900*, (Calcutta: Progressive Publishers,1975).

[53] Sachinandan Sau, *Port and Development, A Study* of *Calcutta Port,* (Calcutta: Firma KLM Private Ltd, 1997).

[54] Sunil Kumar Munsi, *Dynamics of Urban Growth in Eastern India*, (Kolkata: Thema publishers, 2011).

1970s. The author used extensive archival sources, port trust, government reports, and rare secondary sources in his book *The Port of Calcutta: A Short History*.[55]

However, these works only present a dry narrative of the administration of port commissioners. We only get the port's export and import statistics, not any background information about them. So, none of them could clearly explain how many domestic and worldwide economic trends affected the port's activity. It would be quite hard to find the port's shipping and business activity, as well as how the port is connected to the changes in the world economy. Generally, these works don't say much about how Calcutta Port has contributed to the growth of the Indian and world economies.

Since the second half of the nineteenth century, Calcutta Port has gradually lost its important role in modern India, with Bombay Port attracting special attention from merchants, traders, importers, exporters, and shipping companies. Notwithstanding, historians have paid scant attention to Bombay Port. Here again, we observe a similar pattern as in the case of Calcutta. Most historians considered the Bombay Port as part of their discussion on the city's urbanisation process; some authors did not even bother to mention the city's prime port. To give an example, the *Centre for Urban Policy and Governance* of the Tata Institute of Social Science (TISS) has recently published a project that depicts the entire history of Bombay's urban development from 1661 to the present. Needless to say, this work could be a grievous blow to anybody who works on maritime history. It did not end well for Bombay Port as the endeavour has not resulted in Bombay Port having a short chapter to write. For another instance, take a look at the magisterial study carried out by the finest economic historian of the twentieth century, Holden Furber, on the Bombay Presidency, titled *Bombay Presidency in the Mid-Eighteenth Century*. It is a fundamental, research-based work and considered essential reading for Western India's economic history. However, while discussing the Bombay Presidency's country trade, private trade, and company trade, Furber did not address the development of the port of Bombay.[56] Bombay received an 'urban viewpoint' solely from academicians in Frank Broeze's edited book *Gateways of Asia*.[57] A recently published study titled 'Bombay: From Fishing Village to Colonial Port City (1662-1947)' by Dick

[55] Nilmani Mukherjee, *The Port of Calcutta: A Short History*, (Calcutta: The Commissioners for the Port of Calcutta, 1968).

[56] Holden Furber, *Bombay Presidency in the Mid-Eighteenth Century*, (Bombay: Asia Publishing House, 1965).

[57] Mariam Dossal, 'Bombay and the Famine of 1803-6, The Food Supply and Public Order of a Colonial Port City', in *Gateway Of Asia,* ed. Frank Broeze, *Op.cit.,* pp.127-48.

Kooiman shows how numerous external and internal forces had transformed the nature of the city.[58] They were merchant communities, traders, migrant labourers, waves of imperialism and nationalism, and great freedom fighters. The article does a great job of tracing Bombay's gradual evolution from a trading post to a significant urban centre in the British Empire. However, the readers of this article would be hard-pressed to trace the evolution of the Bombay Port or how it shaped the city's economic history. In many additional scholarly works, similar stances toward the Bombay Port were expressed, ranging from prominent journal articles to books published by well-known publishing houses. Only the Mumbai Port Trust cleared the way for significant attention to be paid to writing the entire history of the port. In 2000, the trust published a book named *Tides of Time: History of Mumbai Port,* where the author explored several important topics such as a short history of Bombay Port, its development, economic activities, export-import statistics, labour issues, and the port's role in the city's urbanisation.[59] Although, like with Calcutta, readers may find it exaggerated the port trust's actions and achievements!

The global political and economic landscape of the nineteenth century was changed by World War II. A lot of new countries, particularly in the West, have become important players in international politics. Traditional powerful powers have lost their dominance. After the war, practically every country and nation started rapidly altering their infrastructure to make it more modern. The curve of countries' foreign commerce, which slowed down during the two world wars because of political instability and, to a lesser extent, the worldwide shift to import substitution after 1945, has started to rise again. During this time, governments all over the world put the most importance on rebuilding infrastructure that would increase the potential of shipping and handling cargoes. At this time, ports were given extra attention by policymakers and statesmen because the ports were important for a country's international trade and business. When containerisation was introduced in ocean shipping in the 1960s, it became very important to improve ports' infrastructure. This was especially true in the 1980s and 1990s, when trade liberalisation began to spread to countries all over the world, including Latin America and India. During this time, governments, business groups, traders, and major

[58] Dick Kooiman, 'Bombay: from Fishing Village to Colonial Port City (1662–1947)', in R.J. Ross, and Gerard J. Telkamp (eds), *Colonial Cities: Essays on Urbanism in a Colonial Context*, (Springer, Reprint edition of 1985), pp.207-30.

[59] *Tides of Time: History of Mumbai Port*, (Mumbai: Mumbai Port Trust, 2000).

financial firms around the world gave the seaports a status similar to primogeniture. As a result, ports around the world have become important economic centres.

These new changes at ports' character facilitated more academic research on ports and port studies by well-known development studies researchers, economists, and historians. It went in *two* different ways. A group of experts, mostly leftists, tended to make the adverse impacts of port modernisation seem worse by bringing up different problems in the job market. Some people, who may be called liberals, wrote a lot of articles in academic publications to show how modernity contributed to economic growth, GDP, and per capita income. An example of the former kind is the work conducted under the aegis of *Shri Ram Centre for Industrial Relations,* published in the year 1970, titled *Trade Unionism in Indian Ports: A Case Study at Calcutta and Bombay*[60] (note the publication year! It was when Indian ports and government started adopting the containerisation scheme). Here, the author has traced the growth of trade unions in the ports and made some concluding observations based on a comparative analysis of the ports of Calcutta and Bombay. Aniruddha Bose, a professor at Saint Francis University, is the most recent addition to this type of research. It was Professor Bose's 2018 book, *Class Conflict and Modernization in India: The Raj and the Calcutta Waterfront*, that delved in-depth into the modernisation process in Calcutta Port from 1860 to 1910.[61] While going through the existing works/literature on Calcutta Port, the author lamented: "Despite the significance of both the port and its workforce, there is very little historical literature that covers the port's history".[62] For the period of post-independent India, a recent work, *Logistical Asia, The Labour of Making a World Region,* added a further contribution where ports have been seriously considered as the focal point of discussion. The book also looked into how improvements in logistical management changed the lives of port workers.[63] Still, the primary issue is that all of the contributors played a game to avoid using official archive sources. Their arguments and conclusions are based entirely on secondary data.

It is still somewhat unexplored in academia to estimate how seaports strengthened the contours of the colonial world economy. A group of academics has

[60] Michael V. d. Bogaert, *Trade Unionism in Indian Ports*, (New Delhi: Shri Ram Centre for Industrial Relations, 1970).

[61] Aniruddha Bose, *Class Conflict and Modernization in India, The Raj and the Calcutta Waterfront (1860-1910)*, (New York: Routledge, 2018).

[62] *Ibid.* p.7

[63] Brett Neilson et al. (eds), *Logistical Asia, The Labour of Making a World Region*, (Switzerland: Springer, 2018).

recently done this effectively in the context of the Atlantic World Economy's peak growth phase, which spanned 1850 to 1930. In a recently published book titled *Atlantic Ports and the First Globalisation,* contributing authors have considered the seaport an *institution*. The book studied several essential features of colonial Atlantic ports, such as infrastructure improvements, technological advancements and reforms, as well as port administration.[64] Perhaps for the first time, as it seems to the author of this present essay, scholars and historians have considered the colonial ports as an 'independent institution' rather than a part of the city's urbanisation. Readers will find several intriguing subjects in this collection, such as Daniel Hidalgo's write-up on the steps taken towards modernisation at Dakar (a port located on the Cape Verde Peninsula, West African coast).[65] t was an important port for the French African Empire. Sometimes, recent scholars tend to consider the ports as one of the principal instruments for sustaining the nineteenth-century colonial world empires. This is perfectly portrayed in the recently published book titled *Colonialism in Global Perspective* (2021).[66] The author has represented the ports in a slightly different manner. Despite the author's primary focus on port cities, he meticulously explored how ports served as a key tool for spreading the webs of colonialism and assisting in executing colonial exploitation. In his own words, 'A port is a political and economic domain where mobility over land connects to mobility over seas, …ports are also governmental apparatuses for the command of movement across land and sea, and between societies'.[67] A fundamental lacuna lies in the author's over-attention to the aspects of the seaports' specific role in managing trans-oceanic human migration in the colonial realm. Other considerations, such as trade, shipping, and modernisations, were consciously disavowed. Despite these shortcomings, the book is the only study that discusses colonial histories with ports as a key component. In recent times, a subset of economists, historians, and development studies professionals based in Australia have carried out and published good research projects on the development of Australian ports in the contemporary era, making port history research more appealing, enlightening, and scientific. Among them, two renowned Australian historians, Professor Frank Broeze and Malcolm Tull, have done numerous empirical studies on the business and shipping

[64] *Atlantic Ports and the First Globalisation, c.1850-1930*, ed. Miguel Suárez Bosa, (New York: Palgrave Macmillan, 2014).
[65] *Ibid.*, pp.90-111.
[66] Kris Manjapra, *Colonialism in Global Perspective*, (New York: Cambridge University Press, 2020).
[67] *Ibid.*, p.102.

of Australian ports. With their excellent research outputs, port history research has grown popular within the domain of modern maritime history. In an excellent essay, 'Australian Ports Since 1945', Malcolm Tull carefully examined various changes that occurred in some important sectors of the Australian ports, such as trade and shipping activities, port performance, technological changes, and economic reforms.[68] It has demonstrated the various obstacles the major Australian ports have faced since 1945. The discussion ended with suggested remedies to improve the capacity of the Australian ports to cope with the webs of the emerging world economy.[69] In the Indian context, Megan Maruschke's recent outstanding scholarship, *Portals of Globalization, Repositioning Mumbai's Ports and Zones, 1833–2014,* has critically examined the long historical journey of Bombay/Mumbai Port based on its various proposed plans, projects and reforms from the time of British colonialism to postcolonial liberalisation.[70]

A detailed history of the port of Singapore and its postwar development is well documented in an edited book titled *50 Years of Transportation in Singapore,* in which author Giulia Pedrielli, among others, examined in detail how the port of Singapore authority adopted several unique measures to cope with the changes in global shipping in the second half of the twentieth century. Here, the authors provided some glimpses into the overall history of the Singapore Port and the development of containerisation of the port is discussed with sufficient care. They showed that the concept of unit load caught the attention of the port authority since the beginning of the 1960s. However, the authors paid much more attention to the activities of the port authority, which made Singapore one of the most developed and modern ports of the World. Containerisation was discussed, but the authors neglected the various socio-economic pre-conditions that pushed the port authority towards unitization. The discussion is basically limited to the domain of the port-based activity, and thus, the broad historical climax has been omitted. In fact, the sources that the authors used for the narrative are confined to the PSA's annual reports. Also, their discussion is concentrated on the development of the port from 1990 to the present time.[71]

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[68] Malcolm Tull, 'Australian Ports Since 1945', in Lewis Fisher, *Harbours and Havens, Op.cit.,* pp.111-138.

[69] *Ibid.*, p. 138.

[70] Megan Maruschke, *Portals of Globalization, Repositioning Mumbai's Ports and Zones, 1833–2014,* (Berlin: De Gruyter, 2019)

[71] Giulia Pedrielli, et al, 'Development of the Port of Singapore: A Historical Review' in Tien Fang Fwa(ed), *50 Years Of Transportation In Singapore: Achievements And Challenges*, World Scientific, Singapore and London, 2016, pp.403-478.

A few works can be cited in which the issue of Indian shipping since independence has been historically documented. The first one is Professor Nayar's rudimentary work on postcolonial Indian shipping. His book, *The State and Market in Indian Shipping,* examined in detail the role of the nation state in the development of Indian shipping in the 1960s and 1970s and then showed how the shipping development after 1980 became a marginalised issue. According to his argument, since independence to 1960 was the era of "slow growth" for Indian shipping, then Indian shipping got a positive vibe up until 1980, which he marked the "golden age", and then the era of "slow growth" started since 1980, when the world shipping industry faced financial crisis and stagnation. Professor Nayar has paid attention to Containerisation in detail, but mostly stressed why India failed to be an advanced container trading nation or lagged behind in international container shipping. He mentioned a number of evidence and proved that the nation state was aware of this new technology. However, his major attention was on the activities of the nation state or, to some extent, the SCI, and therefore, the overall picture of containerisation is missing.[72] Nayar's work also lacks the story of how the containerisation issue gave birth to several problems in Indian waterfronts and the prolonged antagonism between the government and the port trusts, or how containerisation made an impact on the effectiveness of non-state actors within the nation-state. H.B. Desai, who was the Director of the Indian Institute of Foreign Trade, published a companion volume on Indian shipping. It is a collection of articles, earlier published in Marine Times, which address basically some of the ongoing problems of Indian shipping in the decade of 1990s. while discussing various technical and strategic problems, the author did not discuss much on containerisation, and emphasis has been paid on various UN Conventions on liner shipping.[73] The author, however, made use of scant evidence that portrays how Indian shipping lost ground in the worldwide web of container shipping, chiefly due to the paucity of equipment in Indian ports.[74]

- **Relevance of the Present Research**

Gaps in the literature certainly encourage researchers to dig further. However, this is not the fundamental motivation behind my research. I am interested in conducting a study on Asian containerisation, not just because it has not been extensively studied, but also

[72] Baldev Raj Nayar, *The State and Market in India's Shipping: Nationalism, Globalization and Marginalization, (New Delhi: Manohar Publishers), pp.282-288.*

[73] H. B. Desai, *Current Issues in Indian Shipping*, (New Delhi: Commonwealth Publishers, 1989).

[74] Ibid., pp.35-36.

for several other compelling reasons that include both "academic" and "beyond-academic" spheres.

Academically, my research will contribute to *four histories* of postcolonial developing states: First, rather than nation-state-led histories, it focuses on different bilateral and multilateral trade agreements between port trusts, private shipping companies, maritime institutions, and international development agencies/banks that played a big part in the economic development of Asia/India after 1945. Second, this research will advance knowledge of the role that FDI exports played in developing nations following the fall of Britain's global empires in Asia and the inclusion of the US and other non-traditional maritime powers, such as Greece and Japan, in the Asian economic landscape. Third, this research will explore how the need for huge capital investment in containerisation paved the way for the gradual participation and inclusion of *privatisation* in the Indian public sphere since the 1970s. Fourth, the history of containerisation in India will help us to know about the future of the *Swadeshi* spirit in the post-independent period, as well as the little-known history behind the rise of major national shipping firms like Great Eastern and Scindia in world trade.

Recent studies indicate a significant *rise* in port activity and shipping in the Indian Ocean region. Two incidents call attention first: the bankruptcy of Hanjin, one of the largest container shipping companies in Korea, in 2016, followed by the blockage of Ever Given (a container ship) in Suez in 2021. The commonalities between the two tragedies lie in their connection with container shipping and their significant linkages to the Asian economy. Both incidents "triggered a worldwide crisis with global consequences". These two incidents substantiate the significance of container shipping and Asia/East in the global economy.

In recent times, developing regions—particularly India—have been actively involved in enhancing their "maritimity" (a concept coined by Bernard Cohen to denote a country's ability to make use of the sea). This is further demonstrated by the Indian government's announcement of the *Maritime Summit* in 2021, which attracted a wide range of stakeholders in the maritime sector, including global and local investors, CEOs of shipping companies, industry experts, policymakers, technology providers, bankers, insurers, and representatives of major ports and shipping lines, with the prime aim of modernising port and shipping sectors. Moreover, the *Maritime India Vision* (MIV 2023) lists more than 150 programmes, some of which entail modernising Indian ports in order

to better compete with other maritime powers like China in global shipping. Also, the contribution of India's role in global shipping is explicitly highlighted by the fact that India accounted for 10.4% of global maritime trade, and contributes 9.03% of the total seafarers globally. Within years, Indian ports will likely be included in the top 20 container ports of the world. But if one were asked about the origins of the Asian rise in the global economy and international shipping? This inquiry has induced me to plunge into this matter. I believe it is an opportune time to conduct an extensive historical study on the Asian postcolonial rise in international shipping.

Numerous studies have been linked to container shipping. These include maritime economic and business history, firm studies, globalisation, international business, and strategic management. Therefore, a thorough research study on the development of containerisation/modernisation in shipping based on primary sources could aid in our understanding of a number of phenomena, such as the strategic history of Asian globalisation, Singapore's secrets to success in international trade, or the underlying causes for India's slow growth in global shipping since independence. Studying these subjects will strengthen corporate competitiveness for global corporations and government policymaking as well.

- **Objectives**

The main objective of this research is basically a new original contribution to the field of maritime history, logistical management, and business history of shipping in the twentieth century. It will place a technological innovation in the world shipping industry in the broad arena of globalisation, liberalisation, and the changing nature of the Asian states over the last seven decades, and tries to establish a relationship between the postcolonial Asian development and international shipping. It further tries to redefine the concept of archives in the light of using a vast amount of untapped non-governmental sources, private records, and corporate files, which could contribute equally/or sometimes more than the conventional method of using governmental archives.

- **Major Hypotheses**

Based on existing literature on post-war shipping, the present study adopts three major pre-imposed hypotheses: First, the post-1945 maritime trade and shipping in the Indian Ocean was altered by technological forces more so than "liberal bilateral orders." Second: Major structural changes-what is often called in academia as structural

adjustment, paved greater way to facilitate capital investment in the maritime business in Asia. Third: In contrast to the West, where it was initially spurred by a few private shipping companies, the development of containerization in the Indian Ocean was closely entwined with the composition of commodity exports and, later, the input from the various transnational development institutions in Asia.

- **Chapterisation**

The First Chapter discusses the structural changes in long-distance shipping networks in the Indian Ocean using a thorough and comparative manner. It examines the factors contributing to the success and failure of marine networks, along with their historical consequences. A thorough investigation demonstrated that the authoritarian characteristics, anti-maritime stance, and significant dependence on agrarian economies of Asian republics were incongruent with long-distance shipping networks. However, "inclusive" statehood policies, rulers' cosmopolitan orientations to business, Asian maritime merchants' "managerial" and innovative talents, common geographical demands, and the political power of merchant groupings were far stronger than the limits, which made maritime trade thrive. Empire-building, not enough naval power, obsolete maritime technology, and a lack of leaders who were interested in the sea all led to the failure of shipping networks. Lastly, this chapter talks about how marine technology has changed since the 1700s, which has made these "positive variables" less beneficial in the Indian Ocean trade. The discussion has also backed up modern economists' idea of an "institutional mechanism" to explain the expansion of globalisation and ocean transportation.

The Second Chapter has depicted the historical development of containerisation at Calcutta Port. It paid some special attention to depict its long early historical development since the early modern period, and shows that before the coming of the British in Bengal, the shores and waterfront of Bengal were already connected with the expanding worldwide networks of commerce and trade. However, after the arrival of the EIC, its intensity and depth heavily increased, and for the growth of commerce, the British established Calcutta as a modern port. This chapter further argues that the selection of the site of Calcutta Port proves that the present location of Calcutta Port was the best choice among all failed attempts of the British to set up a modern port. Using data, this chapter discusses in detail the maritime trade of the Calcutta Port in the nineteenth century, the war and depression effects, the development of the port facilities

after independence, the growth of trade in the sixties and the advent of containers. Using a large section of archival records, both government and private, this chapter argues that Calcutta was much more serious about developing containerisation, and due to being a riverine port, it got some special privileges, which further helped invest its surpluses in container facilities. By the end of the century, container trade successfully occupied one of the largest shares of the sources of its income. It also pays attention to various multiparty agreements and cooperation between the port trust and the international development institutions, which proved instrumental in increasing the port's potential in container shipping.

The Third Chapter of the thesis investigates the historical development of containerisation in the port of Bombay from the 1960s to the coming of the second millennium. However, a concise early history of the port and the Bombay Island since the coming of Europeans has been given as a briefing to understand the contours of continuity and change in this maritime port. This historical sketch further helps in making a comparison of Bombay with other European port cities in Asia. While digging through many travellers' accounts and contemporary European sources, it is found that the British choice of Bombay for setting up a port was driven mainly to secure their commercial fate in the western Indian Ocean against their counterparts, European nations, but also for its geographical position, suitable for a naval military base. Using the untapped official records and correspondence between the Bombay Port Trust and the national government for the first time, and to a large extent, the corporate sources mainly of private shipping firms and chambers of commerce based in Bombay, this chapter investigated three main questions: first, was there any precondition of containerisation in the port of Bombay? second, how did, and in what extent, the coming of containers affect the overall trajectory of the Bombay waterfront? third, how did it change Bombay's overseas trade pattern, and what was the response of the interest groups— such as exporters, importers, shippers— on the coming of the container age? An in-depth examination of these sources finds that the Bombay Port was well aware of, although not prepared for, containerisation and its move toward containerisation in the initial phase was mainly attributed to the dynamics of import-trade patterns. Only after 1980, containerisation got the prime focus both from the port and the interest groups associated with shipping. Nevertheless, the port faced animus views on the development of port facilities both from various local bodies as well as the national government,

which continued till the end of the century. This dichotomy ended up with the operation of Nhava Sheva, signifying the port hierarchy as a result of containerisation development in Asian shores.

The Fourth Chapter has documented the growth, development and expansion of containerisation in Singapore and its impact on the economy and trade of the port. This survey explores a general history of Singapore since the thirteenth century to 1819 when it emerged as a free port, some basic history of Singapore's economy after the Second World War, its rise in the world economy and, in particular, the rise of Singapore as the busiest container port in Southeast Asia. The present analysis has developed a notional history: since the 1960s, after the establishment of Singapore as an independent state, it began to focus more on the development of its exports, and thus, the port received topmost attention as a tool for increasing export potential. But until 1980, the condition of Singapore's port was not satisfactory to the shippers. However, the port authority faced spontaneous upward trends of container shipping, mainly imports, and thus suggested that the government allow some special privileges to the maritime sectors for the better improvement of the country's ocean shipping. Since 1980, container shipping has received topmost priority from the port and government, and it was at this time that Singapore received loans from international development institutions. Although a similar story with India is that, at its initial stage, even the World Bank was unsure about investing in container facilities in Singapore due to the fact that such a big investment would never bring a positive return. But in reality, Singapore received topmost attention from world shippers and shipping companies due to its geographical location. The government welcomed private investment in the port sector, and its result was very satisfactory, as within a few years, Singapore replaced some other regional ports as a hub of container trade. The direct impact of the growth of container trade was also the changing nature of government policy on trade. Since the 1970s, the government has implemented a programme for industrialisation, a move that was connected with the growing container trade. On the contrary, India did not take such an aligned programme and thus was ahead of Singapore in containerisation development.

The thesis ended up with a Conclusion which basically analyses the development of containerisation in Asian ports from a *comparative* approach. It explores some general features of the Asian containerisation that include the precondition, government strategy, impacts on port policies, and overseas economy, as well as the responses that all of the

port users showed during the coming of the iron box on the shores. It also highlights some differences between the Asian and Western containerisation in the era of the 1970s and 1980s, and argues that overall, the coming of the containers had a greater impact on the shipping scenario of Asian waterfronts than any other forces in the twentieth century. At the end, it suggests some limitations of this thesis and provides the possibilities of further research.

CHAPTER - 1

Technological Regimes and Economic Restructuring: The Indian Ocean in History

CHAPTER BRIEFING

This chapter examines the “structural changes” of Indian Ocean long-distance shipping networks using a comprehensive and comparative methodology. It explores the causes of the success and demise of maritime networks and their historical effects using historical examples. An extensive study revealed that Asian republics' authoritarian nature, anti-maritime posture, and strong reliance on agrarian economies were incompatible with long -distance shipping networks. However, "inclusive" statehood policies, rulers' cosmopolitan approaches to commercial matters, Asian maritime merchants' "managerial" and innovative skills, common geographical needs, and merchant groups' political power far outweighed the constraints, allowing maritime trade to grow. The shipping networks failed due to empire-building, insufficient naval might, age-old maritime technology, and a lack of marine-minded leaders. Finally, this chapter explains how marine technology changed since the eighteenth century, reducing the usefulness of such “positive variables” in Indian Ocean trade. Modern economists' claim of an "institutional mechanism" to explain globalisation and ocean shipping growth has also been supported by the discussion.

Ancient Period— On the Way to Everywhere: Islamic Exchange Networks in the Indian Ocean— Iberian Episode: European Networks in the Indian Ocean— Aftermath— Observations

CHAPTER -1

1.1 Ancient Period

> these commercial people of Egypt, India, Mesopotamia and Phoenician caused the first Industrial Revolution which then was no less significant than the later Industrial Revolution in England.[1]

Historically, evidence of long-distance trade and shipping in South Asia, as well as the Indian subcontinent, may be traced back to the Indus Valley Civilization. It was widely assumed that the Indus Civilization (also known as Harappan Civilization, an urban well-developed settlement that flourished between B.C.E. 2300 and 1750 in the Indian subcontinent) was landlocked, with only a few overland trade routes. It was also claimed that there was little international trade that might have an impact on the Indus people's culture. Even recently published books by certain well-known historians have joined this trend.[2]

However, some significant study has established the existence of a vast network of seafaring and maritime trade connecting Harappa, Mesopotamia, Oman, and the Iranian realm. The similarities between Harappan archaeological findings and those of its contemporary civilizations, as well as the presence of a large number of ports along Gujarat's west coast with adequate facilities for discharging ships or unloading cargoes, strongly support the view that the Indus people were inextricably linked to the outside world via maritime trade and shipping. At Chanhu-Daro, a site associated with the Harappan Civilization, archaeologists discovered several completed beads, raw materials and drills. It demonstrated that it was a centre for the processing of beads. The fact that the same type of beads have been discovered at numerous key archaeological sites in

[1] Quote of a modern scholar, cited in Baldeo Sahai, *Indian Navy, a Perspective: From the Earliest Period to Modern Times*, (New Delhi, Publication Division 2006), p.16.

[2] A perfect example is the recent work of the well-known economic historian Prof. Tirthankar Roy. In his newly published book, he explicitly said that the foreign trade of the Harappan people was on a small scale and that they had no direct contact with the West, and denying the existence of an international exchange network. See Tirthankar Roy, *India in the World Economy: From Antiquity to Present*, (Cambridge University Press 2012), p.21.

Mesopotamia proves beyond any reasonable question that beads were exported from the Indus Civilization to Mesopotamia is also noteworthy. In addition, the city of Harappa is referred to as *Meluhha* in the Cuneiform records of Mesopotamia. Sargon of Akkad mentions that ships from Meluhha were on their way to Akkad, and this is also supported by other sources. The city of Meluhha was referenced multiple times in the Akkadian inscription, including the following:

The ships from meluhha,
The ships from magan,
The ships from dilmun,
He made tie-up alongside quay of akkad,[3]

Meluhha is named 76 times in this inscription. The following is a list of some of the items that are mentioned in this inscription.[4]

Meluhhan style objects	**Ships of Meluhhan style: 2** **Meluhhan style furniture:3** **Meluhhan birds: 5** **dog of Meluhha: 1** **cat of Meluhha:1** **carnelian:8**

It is clear from the above list that there was a tight trade and cultural connection between Harappan and Mesopotamian Civilization. Oman had a similar level of communication with Harappa as well. The discovery of Harappan-style pottery at Ros-al-Jind, as well as seals, decorations, and beads from other sites in Oman, further supported the theory that the Harappan people were successful in establishing contact with the Oman world. Harappa was also a major exporter of the long barrel cylindrical beads that have been unearthed at numerous Mesopotamian archaeological sites. The most intriguing piece, however, is a cylindrical seal portraying a *Meluhhan* interpreter called *Su-ilisu* discovered during archaeological excavations in Mesopotamia, which adds to the

[3] V N Prabhakar: 'Harappans and Their Mesopotamian Contacts', (India International Centre, Occasional Publication-48 June2013), p.16.
[4] ibid.

evidence of a Harappan settlement or colony on the Mesopotamian territory. Some Harappan merchants might have moved to Mesopotamia to do business there.[5]

Scholars have even proposed that they were the primary drivers of commerce between Harappan and Mesopotamian merchants. Immigrant Indus families in Mesopotamia retained and transferred their language, writing systems, and weights measurement systems as strategic trading instruments.[6] After all, if the Indus traders were greatly involved in such large-scale commerce, it is difficult to assume that they did not organise their agencies, warehouses, and credit institutions at the Sumerian court, as Massimo Vidale has posited.[7] Mari was an important city-state and outpost of Sumerian Civilization. Excavation work has discovered a 'Treasure Jar' containing 52 artefacts under a temple. It contained a great number of carnelian beads of the traditional long barrel cylindrical variations, which are probably of Harappan origin, as the same types of beads have been discovered at Indus cities like Dholavira, Banwali and Kalibangan.[8]

Archaeological discoveries at Lothal and other sites shed light on the Indus people's seafaring world. Lothal was the Indus Civilization's main port, with a protected harbour, a deep dock, a storehouse for storing rice, cotton, and wheat, and other facilities comparable to those seen in modern ports. The entire coastline of Kutch, Kathiawar and South-Gujarat, covering approx 14000 km was studded with Harappan ports. Todio on the coast of Kutch afforded shelter to ships. Amra, Lakhabawal, Prabhas (Somnath) and Kanjetar were the other important estuarine ports of the late-Harappan period. George F. Dales found a new port (Sotka-Koh) on the Pasni estuary, perhaps four thousand years old. Desalpur and Rojdi were the two intermediate ports / stations; Harappan merchants used these ports to trade with Kathiawar. Certain objects, such as a bowl, were discovered here that were derived from Lothal and Mohenjo-daro. Harappan merchants are believed to have created the two other intermediate outposts after seizing control of Lothal, ensuring effective connection with the hinterland. S. R. Rao believed Harappan people came to Gujarat by sea route. Lothal's superior shelter and deep docking amenities would be adequate to entice Harappa's seafaring merchants. They

[5] ibid, pp. 19-20.

[6] Massimo Vidale: 'Growing in a Foreign World: For a History of the "Meluhha Villages' in Mesopotamia in the 3rd Millennium BC, (Proceedings of the Fourth Annual Symposium, Ravenna, Italy, October 2001), p. 276.

[7] ibid, p. 273.

[8] V N Prabhakar: "Harappans and Their Mesopotamian Contacts", op. cit, p.21.

peacefully settled here, colonised the port and gradually developed it as a centre of international commerce. The water management system in Lothal was one of the most impressive aspects of the city's engineering infrastructure. There are no other examples of such a port with a water-locking mechanism in the whole Bronze Age world except Lothal. The dock could readily accommodate ships weighing 40 to 50 tonnes. Neither the pre-Harappan nor the post-Harappan periods saw the development of such advanced hydraulic engineering. These examples of sophisticated technology used at Lothal not only demonstrated the port's effectiveness but also suggested that Lothal had a close link with other international ports from where such innovations might be acquired.[9]

A number of stone anchors have been discovered near Lothal. One of them is triangular in shape, with a hole at the apex of the triangle. It's interesting to note that contemporary Egyptians and Phoenicians both employed the same type of anchoring system. Some terracotta models recovered at Lothal show three different types of boats. One of these is a ship with a sail and bent stern and prow, similar to Egyptian boats of the Gerzean period (B.C.E. 3100).[10] Lothal too had coppersmith, some bun-shaped ingots have been found at Lothal and other nearby sites. Copper was probably brought to Harappa from Susa and Oman, as evidenced by the discovery of copper ingots in the shape of buns in Ras-al-Qala and other locations in the Persian Gulf. Two terracotta seals found at Lothal indicated the sign of international monetary linkage: one bears the impression of a seal with swastika motif in the same style as seals from Susa and Brak. Indus cubical stones used for weight measurement have also been discovered in Tepe-Gawra, Ur, and Susa, indicating not only merchant movements but also a stable economic relationship that resulted in the creation of a unified weight system. A ceramic skull of a bearded man with totally Sumerian features and a mummy both discovered at Lothal further establish contact with West Asia.[11]

Any ancient history student might be curious to know how such vast networks of maritime trade and transportation developed and survived over time. These exchange networks were successful because of the rapid transformation of a pastoral society into a purely urban settlement, which resulted in the creation of a merchant class with

[9] S R Rao, 'Shipping and Maritime Trade of the Indus People', (*Expedition Magazine*, 7.3, May 1965), pp. 30-32.

[10] ibid., p. 36.

[11] ibid.,p. 37.

significant political power. Additionally, moving merchant groups with colonies in foreign countries facilitated the dissemination of information about international market demands. And after all, healthy communication between the hinterland and ports enabled them to export regularly to foreign countries. According to Mark Kenoyer, much of the superior technology used by the Harappans laid the groundwork for later technical breakthroughs not only in South Asia but around the world.[12] Trade with India influenced the Persian Gulf area. For instance, Harappan weights and measures became a standard across the region. Dilmun and Magan adapted Indus weight systems, which became known as the 'Standard of Dilmun' to Mesopotamian people.[13] These ancient traditions of the commercial relationship between India and Western Asia even had recent prolongation. The Indian rupee was used and valued as legal money in Oman, Qatar, Bahrain, and the United Arab Emirates until May 1966.[14] For a while, the RBI (Reserve Bank of India) once issued special gulf rupees in 1959![15] Today, large numbers of Indians live and work in gulf countries are the most visible result of these exchange networks. Furthermore, recently a new civilization called 'Jiroft Culture' has been discovered in Iran in 2001. Interestingly, some seals like Harappan style and humped zebu cattle have been found here that reflect the close cultural relation between Harappa and Iran.[16] At last it could be said the great upliftment of settlements in the sixth century B.C.E. which historians called 'Second Urbanization' had Harappan root! The collapse of these exchange networks was caused by a political crisis that occurred at the same time as Harappa and all other contemporary civilizations experienced a dramatic decline.

Indian Ocean maritime trade often became a feed for revenue boosting and back-end military growth of other imperial systems beyond the typical geographical horizon of Asia, such as the Roman Empire. Spectacular and steady expansion in shipping activity between the Roman Empire and India developed over the course of time. One of the reasons for the growth of these trade relations was the Roman Empire's political stability

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[12] Jonathan M. Kenoyer: 'Trade and Technology of the Indus Valley: New Insights from Harappa, Pakistan', (*World Archaeology*, Vol. 29, No. 2, Oct 1997), p. 277.

[13] Burkhard Vogt: 'Bronze age Maritime Trade in the Indian ocean: Harappan traits with Oman peninsula', in Julian Reade (ed): *The Indian Ocean in antiquity*, (Routledge,1996).

[14] Sanjeev Sanyal, *The Ocean of Churn: How the Indian Ocean Shaped Human History*, (Penguin Random House, 2016), p. 47.

[15] Rajiv Ranjan and Arun Prakash: 'Internationalisation of Currency: The Case of the Indian Rupee and Chinese Renminbi', (*RBI Staff Studies*, Vol.SS DEAP 3/2010, April 2010), p. 14.

[16] Sanjeev Sanyal, *The Ocean of Churn,* op.cit., p. 46.

and growing reputation.[17]. Rome annexed Egypt in B.C. 30 and soon after, since B.C. 27 Egypt was governed under the direct control of Augustus. Rome seized control of the major sea routes to India and abandoned land routes that were too costly, fraught, and insecure.[18] Commencement with the beginning of the Christian era, this interaction reached its zenith over the next two centuries. The trade network was truly international by nature, as it included many small regions, intermediary groups, and large political units. Rome traded with India chiefly for but not limited to spices and other oriental products, and in return, she had to pay a great amount of bullion (gold and silver). Almost all classical Roman authors expressed concern about the un-adjustable volume or imbalance in Indo-Roman trade and advocated for a drain hypothesis. An excerpt from a contemporary source may aid in determining the extent of Roman awareness of Eastern commerce. Pliny the Elder, a Roman author, wrote:

> Each year, India, China and the Arabian peninsula take at the very least one hundred million sesterces from our empire; that is what our luxuries and women cost us. For what fraction of these imports is intended for sacrifices to the gods, I want to know, or on behalf of the spirits of the dead?[19]

However, we do not have a proper datasheet that supports such a claim. Modern research proves both parties got benefited from this trade relation. There were considerable changes occurred in the field of Indian Ocean shipping. *First* and foremost, Indian traders came into intimate touch with westerners in these trade relations. Although India had a history of communication with the western regions prior to the Christian era, that contact had been limited and irregular; now, it has become more frequent and consistent. The frequency of visiting Indian embassies to Rome between the two subsequent centuries further validated this proposition.[20] *Second*, Shipping or voyaging times were also slashed in the process. It was owing to Hippalus (?), who invented the proper utilisation of the monsoon winds in A.D. 45 (A.D. 45), that ships

[17] E. H. Warmington, *The Commerce between the Roman Empire and India*, (Munshiram Manoharlal Publishers 1995) ,p.82.

[18] P. Ballet, 'From the Mediterranean to the Indian Ocean. Egypt and long-distance trade in the Roman Period: the evidence of the ceramics', in Marie-Francoise Boussac, and Jean-Francois Salles (eds), *A Gateway from the Eastern Mediterranean to India: The Red Sea in Antiquity*, (Manohar Books 2005),p. 117.

[19] Cited in David Abulafia, *The Boundless Sea: A Human History of the Oceans*, (Oxford University Press 2019), p.116.

[20] Indian embassies were sent to Rome during the reign of Roman emperor Trajan (A.D. 98-117), Hadrian (117-138), Antoninus Pius (138-161), Heliogabalus (218-222), Aurelian (270-275), Constantine (323-353) and Julian (361-363). R. C. Majumdar (ed), *The History And Culture Of The Indian People Volume 2: The Age of Imperial Unity,* (7th Edition, Bharatiya Vidya Bhavan 2001), p. 625.

that had previously taken 90 days to reach India from the Red Sea entrance now only took about a third of that time (within 40 days a ship could reach India).[21] *Third*, the shift in the pattern of Indian Ocean sailing, such as the shift from coastal ships to deep-ocean ventures, lowered the risk of piracy in long-distance maritime trade and provided a further boost to both the frequency and amount of Indian maritime trade. Previously, the maximum number of ships per year completed their sea voyages to India was limited to only 20. But now, one ship each day left the Red Sea for the South Indian ports![22] Previously, trading was primarily confined to the trade of precious oriental items. It has now evolved into a collection of commodities and industrial products depending on consumption. This change in the type of commodity was, of course, a direct outcome of both lowering shipping times and securing sea passages by reducing the risk of piracy at sea.[23] The increase in trade volume further contributed to the increase in the size of ships.[24] *Fourth*, long-distance trade between two big political units facilitated for urban expansion and port development. Many new cities, like Palmyra, Petra, and Alexandria, became important crossroads for east-west trade. The presence of market towns near seaports in the Indian Ocean is frequently seen in *periplus*, indicating that the growth of maritime trade aided the growth of urban settlement during this period.[25] Later, numerous kings, empires, and great dynasties competed for control of these key trading ports and emporia in order to secure commercial interest.[26] The commercial importance of these key trading ports and emporia was soon a point of contention among many kings, empires, and mighty dynasties. According to modern investigations, the picture of the other party's profit was more substantial and crucial than that of India. According to one estimate, the Indian trade produced at least a third of the total Roman state revenue, which was used to fund the construction of the first paid standing (full-time) army in the

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[21] ibid, p.621.

[22] ibid.

[23] There are many field surveys and excavations conducted for exploring Indian goods in the Roman ports of the Red Sea. Recent discovery of a source called as *Vienna Papyrus* dated C.E. mid-second century revealed a firsthand primary description of the traded goods between India and Rome. The document contained some conversations between the two shippers in which valuable information have been found on the traded goods ranging from ivory and nard to textiles, and total weight of the consignment and nature of the then shipping. See H. P. Ray, 'A Resurvey of Roman Contacts with the East', in Marie-Francoise Boussac & Jean-Francois Salles (eds), *Athens, Aden, Arikamedu: Essays on the Interrelations Between India, Arabia, and the Eastern Mediterranean, (*Reprint edition, Manohar Books 2005), pp.99-100.

[24] *The Periplus of the Erythrean Sea*, Edited and Trans by W. H. Schoff, (Longman, Green & Co. 1912), p.26.

[25] ibid., pp. 29, 30-37.

[26] Marie-Francoise Boussac & Jean-Francois Salles (eds), *Athens, Aden, Arikamedu*, op.cit., p. 624.

world. A specific tax on high-value imports from India and China, known in the Roman Empire as *tetarte*, made it possible for the Roman Empire to achieve this goal.[27] While the encounter had some cultural consequences for both units; Indian philosophy affected the western literature, and Western religion in particular Greek culture had a greater impact on Indian art.[28]

If Indian seafarers failed to secure their commercial fate in the Western Indian Ocean against the hegemony of Greeks, Romans, and Arabian merchants, they fared much better in the Bay of Bengal, where they established a monopoly on maritime trade routes that extended all the way to the South China Sea. In this case, the high demand for Indian items in South East Asia enticed the South Indian merchants to immigrate to the Spice Islands for the purpose of pursuing business opportunities. Early *Jataka* stories contain descriptions of Indian merchant ships sailing to *Suvarnabhumi*[29]. Here, a dialogue of *Buddha* is presented which is very crucial in this context:

> Long ago, ocean-going merchants were wont to plunge forth upon the sea, on board a ship, taking with them a shore-sighting bird. When the ship was out of sight of land they would set the shore-sighting bird free. And it would go to the East and to the South and to the West and to the North[30]. [Dighanikaya]

Also, in *Brharkatha-sloka-samgraha* we find the story of Sanudasa, a man, who after numerous tries, finally crossed the sea and arrived there.[31] A sixth-century Chinese account, *The History of the Leang Dynasty* (Book of Liang) casts light on the booming of maritime trade and shipping in Malay peninsula which became the meeting ground for merchants arriving both from the east and the west.[32] Sometimes Indian rulers such as the Cholas in South India secured the sea lanes by monitoring them with a strong naval force whereas the rulers of the Pala Dynasty in Bengal fostered cordial connections with

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[27] Raoul McLaughlin, *The Roman Empire and the Indian Ocean: The Ancient World Economy and the Kingdoms of Africa, Arabia & India*, (Pen & Sword 2014), p.xix.

[28] E. H. Warmington, *Commerce between the Roman Empire and India,* op.cit., pp. 319-20.

[29] *Jataka* stories contain descriptions about the use of shore-sighting birds by the maritime merchants to trade and travel in the far distant lands. There is also instance of crossing the high seas by Indian merchants to reach *Baveru*, an ancient kingdom in the Indian Ocean. Ref. *Jātaka*, *Vol.3,* Trans, Edited by E. B. Cowell (Cambridge, at the University Press 1897), No. 339, p.83,

[30] Cited in *The Journal of the Royal Asiatic Society*, (London 1899), p.432.

[31] R. C. Majumdar and K. K. Dasgupta (eds), *A Comprehensive History of India, Vol. III Part-2*, (Indian History Congress and Peoples Publishing House 1982), pp.1287-88.

[32] ibid, p.1290.

the kingdom of Sailendra.[33] This settlement or immigration of Indian merchants to South East Asia could rightly be called 'trade diasporas' rather than mass migrations as many earlier historians colourized it an example of 'Hindu colonization' or termed it 'Grater India'. Commercial interactions have a greater cultural impact on their lives than economic ones. Hindu culture influenced more on the art, architecture and social life of South East Asia.[34]

Each kingdom in India's history had a different approach to business and trade, and the history of shipping in India and the India Ocean reflects this. Some of them centred their efforts on agriculture, while others paid close attention to maritime commerce. During the Maurya period, the Indian shipbuilding industry was highly regarded in Greek literature. Arrian and Pliny gave descriptions of the variety of Indian-build ships. Some tiny Indian kingdoms also started maritime businesses, and there are numerous old Indian coins depicting various ship kinds. In various Indian buildings, such as the Sanchi sculpture, ships are also shown as a depiction. Such evidence suggests that ancient India had a lengthy history of shipbuilding.[35]

1.2 On the Way to Everywhere: Islamic Exchange Networks in the Indian Ocean

It must be known that the Pagans do not navigate much, but it is the Moors (Muslims) who carry the merchandize. [36] ----- Ludovico di Varthema

Roughly, between 700 and 1500 C.E., a shipping network based on long-distance maritime trade developed in the Indian Ocean, with Islam serving as the main and primary driving force. This force was instrumental in the chronic expansion of Islamic conquest across Asia, as well as the expansion of Islamic commerce or mercantile networks throughout the Indian Ocean's shores, extending from the Persian Gulf to the South China Sea and even to Japan. Prior to the emergence of Islam, the Persian and Sassanid merchants were the primary merchants that controlled trade in the Indian Ocean. Merchants from Byzantium and Italy served as middlemen in trade between the

[33] ibid, p.1297.
[34] Philip D. Curtin, *Cross Cultural Trade in World History*, (Cambridge University Press 1992), pp. 101-03.
[35] Sumati Morarjee , *Indian Shipping Through the Ages*, (Publication name unknown1948), pp.1-7.
[36] *The Travels of Ludovico di Varthema, A.D. 1503 to 1508*, Trans, John Winter Jones (Ed), Hakluyt Society, London, 1863, p.153.

Levant and Western Europe. Islam, beginning in the seventh century, ended both the control of the Persians and the Sassanids over eastern trade and the direct interaction of Italians with the Levant. Islamic commercial networks rose quickly to prominence in Indian Ocean commerce and transport, with operations spanning the region from the east to the west.

For an accurate understanding of Islamic exchange networks, it is useful to assess some major themes:– Early Islamic economy and the rise of the Persian Gulf and the Red Sea as important strategic maritime zones of Asia; China's growing interest in seafaring; India's role in the Indian Ocean trading network; and East Africa's involvement in oceanic exchange. Islam was a major factor in every one of these occurrences.

Historians and academics of Islamic history have long accepted the fact that in its formative stage, Islam encouraged trade and other forms of economic activity. The *Quran* has a number of rules and practises intended to assist traders and their trading activity.[37] Early in his life, Prophet Muhammad was even a successful merchant. Although, in its formative stage, Islamic Arabs did not pay enough focus on maritime trade, instead relying heavily on the caravan economy.[38] The backbone of their caravan trade was a robust camel transit infrastructure in the desert. To enhance trade, Mecca's tradesmen had mutual alliances with indigenous tribes.[39] Mecca and Medina were the two major trading centres. Mohammed's relocation from Mecca to Medina reflects his economic awareness, as Medina was becoming a more important Mediterranean trade center at the time. Medina had a firm grip over the entire Mediterranean region's market.[40]

During the reign of Amer-ibn-al-Khattab, perhaps the first significant event among Muslim kingdoms that indicated their concern for marine trade occurred. As in Egypt, Caliph Umar ordered that the Ancient Ptolemies' Old Canal be re-dug with the goal of connecting the Nile River to the Red Sea. It was later known as *Haikimte Canal*.[41] In 762

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[37] For better discussion about this subject, see - Benedikt Koehler, *Early Islam and the Birth of Capitalism*, (Rowman & Littlefield 2014); Patricia Crone, *Meccan Trade and the Rise of Islam*, (Gorgias Press 2004); and also Maxime Rodinson, *Islam and capitalism*, (Pantheon Books 2007)

[38] K.N.Chaudhuri, *Trade and Civilisation in the Indian Ocean: An Economic History from the Rise of Islam to* 1750, (Cambridge university press 2008), p.43.

[39] For details, see Richard Bulliet, *Camel and the wheel*, (Columbia University Press 1990).

[40] K.N. Chaudhuri, *Trade and Civilisation*, op.cit, p.34.

[41] Joseph De Somogyi, *A short History of Oriental Trade*, (Georg Olms Verlag 1998), p.59.

C.E., the Abbasid monarchs moved their capital from Damascus to Bagdad. Perhaps it was because Bagdad served as the crossroads for all eastern overland routes. As a result, Abbasid's relationship to various remote Asian marketplaces, such as India, Southeast Asia, and China, grew too strong.[42] The transfer also boosted trade on the port of Basra, which quickly rose to prominence as one of mediaeval West Asia's most important ports. The Arabs traded with Calicut on the Coromandel Coast, subsequently reaching China via Indonesia and establishing a thriving Muslim trader's colony at Hangchow (China). They were known as *Khanfu* in China.[43] Previously, Persian merchants used many Chinese ports as the evidence of the presence of the Persian ships at Canton dated back too early to C.E. 717;[44] now since C.E. 758, Arabian merchants were mentioned prominently in many Chinese sources, indicating their active role in trade. The Arabs were referred to as *Ta-Shin* by the Chinese. The account of a ninth-century Persian Muslim merchant and traveller, named Soleiman al-Tajir, contains a detailed depiction of an Arabian ship going to China before the ninth century. However, in 878 C.E., a group of Arab sailors invaded Canton and destroyed it. Following the slaughter, the Chinese government expelled all Muslim merchants and prohibited Arabian/Persian ships from entering any Chinese port city. As a result, Arabian traders attempted to continue trading with China through ports in Southeast Asia.[45] Some historians argue whether or not the Arabs were allowed to reach Chinese ports after the slaughter. Abu Lughod, for example, claimed that Arabs visited China between the fourteenth and fifteenth centuries. She identifies two historical papers from China to support her claim. One is a description of Chau-ju-Kua, a customs inspector who saw foreign ships visiting China. Another is a biography of Pu-shou-keng, a Chinese who worked as an agent for Arabian traders. The arrival of Arabian ships in Chinese ports was noted in both accounts.[46]

In the East-West trade of the Indian Ocean, the East traded four items with the west-silk, porcelain, sandalwood and black pepper, in exchange for ivory, incense, war-horse and a little cotton-textile.[47] Except Basra, another port of Persian Gulf that traded with

[42] ibid, p. 60.
[43] ibid, p. 61.
[44] Janet L. Abu-Lughod, *Before European Hegemony: The World System A.D. 1250-1350*, (Oxford University Press 1991),p.198 ; K. N. Chaudhuri, *Trade and Civilisation,* op.cit., p.50.
[45] Janet L. Abu-Lughod, *Before European Hegemony,* op.cit, p.199.
[46] ibid, p.200.
[47] K. N. Chaudhuri, *Trade and Civilisation,* op.cit., p.39.

China and India was Siraf.[48] Caption Abharah of Siraf had made the sea voyages to China seven times! No one had ever travelled to China with such certainty and returned home without any casualties before him.[49] It took nearly 18 months to travel from the Persian Gulf to China. Some Chinese prisoners were seized by Islamic soldiers during the Battle of Talas in C.E. 751 and eventually returned to China via a Chinese junk that sailed out of the Gulf of Aden in C.E. 762.[50]

The Islamic business networks of the Indian Ocean have expanded their reach to the East African coast. Several archaeological relics of Chinese porcelain and Arabian pottery have been discovered on the East African coast at Kilwa, confirming the account of Arabian presence on the continent's eastern shore.[51] Another location is Zanzibar, where archaeologists discovered a mosque and a *Kufic* inscription, indicating the presence of Muslim traders along the East African coastline.[52]

The pattern of Indian Ocean shipping networks saw some structural alterations around the beginning of the eleventh century which was closely connected with the transformations in the following fields: merchant communities, State systems, shipping technologies and traded goods. The shifts in significant trade routes have been documented by maritime historian Michael Pearson. He pointed out that trade had previously been oriented in a flat East–West direction (Bagdad–Canton), but from the eleventh century onward, it began to shift in a North–South direction (Bagdad–India), then East–West (India–South East Asia), and eventually North–South (South East Asia–China).[53] It was this period when peninsular India or the Deccan began to participate in these trade networks, and divided the direct East – West trade into several shards. Another significant development occurred as a result of the structural crisis, which began in the tenth century when the Abbasid dynasty began to crumble, and the Fatimid dynasty rose to power in Egypt. The Fatimids moved their capital from Tunisia to Old Cairo under the reign of Muhammad Ali. It had a two-fold effect on the sea trade in the Orient. First and foremost, this incident served to improve the value of Alexandria's strategic location, restoring it to its former status as an international port within a short

[48] Joseph , De Somogyi, *Oriental Trade*, op.cit., p.61.
[49] K.N.Chaudhuri, *Trade and Civilisation,* op.cit, p.50.
[50] Clive Ponting: *World History : A New Perspective*, (Pimlico Random House 2001), p.360.
[51] K. N. Chaudhuri, *Trade and Civilisation* , op.cit, p. 57.
[52] Maurice Lombart, *The Golden Age of Islam,* (Markus Wiener Publishers 2003),p. 221.
[53] Michael Pearson, *The Indian Ocean*, (Routledge 2006) ,p.88.

time. The Red Sea, on the other hand, is where prosperous traffic has been redirected away from the Persian Gulf. Merchants were being targeted by pirates because the Fatimid dynasty and its local rulers had taken some measures to safeguard them. It was also decided that they would provide support to pilgrims travelling from the East to Mecca and Medina. The Fatimid's actions and policies, whether taken or implemented, provided stimulants for expanding maritime trade in the Indian Ocean. The ports of Aden and Kish were the two most important international shipping ports. Another element that contributed to Egypt becoming the epicentre of East-West trade was the presence of local Karimi merchants. As in Europe, the Karimi merchants wielded political authority over their trading networks, similar to the Hanse merchants in the Middle East. They quickly rose to the position of monopoly partner in the Aden-India trade.[54] Patricia Risso, a modern scholar of Islamic economy, provides some insightful points about the factors that contributed to the growth of the Fatimid Empire as a naval power. According to her argument, Fatimids' ascent to naval dominance was a necessary result of strong competition between the East and West in the Mediterranean Sea. Europe regained numerous ports and islands in the Mediterranean that she had lost previously during the period of Islamic conquest (Crete in C.E. 961, Cyprus in C.E. 963 etc). The Umayyad Empire of Spain was ultimately overthrown in 1031 C.E. As a result, Fatimid's attention was drawn away from the Mediterranean toward the Indian Ocean. [55]

The economic base of southern Indian states, mostly agricultural rather than commercial, was the primary reason for the growth of peninsular Indian coastal traders' participation in the Indian Ocean trade. The rulers in this area did not get involved in the business of coastal merchants, nor were they interested in it. One notable historian, Abu-Lughod, has labelled the South Indian economy as 'Hydraulic Society'. Because the rulers (including the Cholas) had placed a greater emphasis on local irrigation than on trade.[56] As a result, certain separate mercantile communities sprang up throughout peninsular India. Despite being under Muslim dominion, Upper India was able to avoid paying interest in maritime trade since it was self-sufficient in its agricultural productivity.

[54] Lincoln Paine: The *Sea and Civilization: A Maritime History of the World*, (Knopf Random House 2013),pp. 362-64.

[55]Patricia Risso: *Merchant and Faith: Muslim Commerce and Culture in the Indian Ocean*, (West View Press 1995),p. 22.

[56] Janet L. Abu-Lughod, *Before European Hegemony* , op.cit, 278; Lincoln Paine, *Sea and Civilization*, op.cit, p.360.

Neither Vijaynagar nor the Delhi Sultanate was a maritime power.[57] Individual merchant communities arose at the same time when local merchant guilds went bankrupt and vanished, allowing them to operate more freely because they were not bound by the restrictions of guilds.

During this period, the technology used by Indian Ocean merchant ships underwent changes as well. Merchants from India, China, and the Muslim world began to use new marine technologies. For example, China began using compass, marine charts, radar, and new payment methods in the eleventh century.[58] Two centuries later, Arabic navigators soon followed suit, abandoning their reliance on the moon and stars in favour of a compass.[59] A.R. Lewis, a maritime historian, made a further observation while comparing the Western ships with the Eastern ships.

> they had not yet surpassed the technical virtuosity displayed by the Chinese in East-Asian and Southeast-Asian waters, where various kinds of junks, navigated by seaman who used the compass, were superior to any vessel that Western Europe could muster [60]

However, as Prof. Phillip Curtin has pointed out, the most notable change that occurred after the eleventh century was the transformation of the type of trade goods from smooth luxury items to bulky and regular consumption-based commodities. It was undoubtedly due to the demise of large Asian empires in both the East and the West that the need for luxury items ceased to exist. By the twelfth century, commodities such as textiles and rice, as well as raw materials such as lumber and sugar, had made their way into the Indian Ocean's maritime trade. Curtin further said that the change in maritime technology was resulted from the shift in the commodity composition. For example, the increase in the volume of trade occurred at the same time as the increase in the size of ships. Ships like Dhows and Junks had improved their carrying capacity (as now it contained heavily weighted consumption commodities). They, too, hauled loads of 100 to 400 tonnes.[61]

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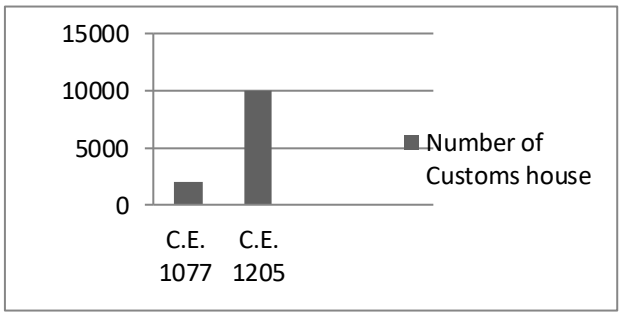
[57] Patricia Risso, *Merchant and Faith,* op.cit, p.41.
[58] Lincoln Paine, *Sea and Civilization*, op.cit., p.384.
[59] Janet L. Abu-Lughod, *Before European Hegemony,* op.cit, p.326.
[60] Archibald R.Lewis, *Nomads and Crusaders A.D. 1000-1368*, (Indiana University Press 1991),p. 136.
[61] Philip D. Curtin, *Cross-Cultural Trade in World History*, (Cambridge University Press 1992), pp. 119-20.

China's involvement in the Indian Ocean's trade and politics grew significantly more intense during this period. Previously, China held an anti-maritime attitude. Confucius favoured agriculture above trade because he believed that trade with other countries could significantly reduce agricultural production or outcomes.[62] However, it is also true that her tribute system functioned as a system of commerce and trade. Central Asian nomadic tribes used to give war horses to China to get access to food and other animals. Eventually, when this tribute system began to fail, China began to look to the sea. From the Han dynasty onwards, China's maritime trade became de-centralised, and it was during the reign of the Tang dynasty, the country's maritime trade began to flourish significantly. Tang emperors established post and government officers in order to oversee and facilitate maritime trade. They also set up shelters for ships arriving on their shores from other countries. Later in the reign of the Song dynasty, China began to manufacture ships for the first time.[63] The Song Dynasty established the standard copper coin in C.E. 960, and within a century, the volume of coins in circulation increased elevenfold. Furthermore, the first state-printed paper notes in the world were produced in China in C.E. 1024, and within a century, they had become a major means of commerce throughout the country.[64] These shifts in the mentality and policy of the Chinese government, as well as the newly more organised shape of the Chinese economy, surely aided the expansion of China's participation in Indian Ocean trade.

Graph no. 1.A Growth of Customs House in China



Source*:* Clive Ponting, *World History: A New Perspective*, (Pimlico Random House 2001) 385.

Chinese naval missions in the Indian Ocean under the command of the great admiral Zheng-He, however, were the country's most visible maritime concern. In terms of frequency and scope, these naval missions were recurrent and extensive: from 1405 to

[62] Rainer F. Buschmann*, Oceans in World History*, (Mc-Graw Hill 2007), p. 21.
[63] ibid, p.23.
[64] Clive Ponting, *World History*, op.cit, p.385.

1433, a total of seven expeditions led by Zheng-He were dispatched from the South China Sea to the coast of East Africa, covering a distance of over 2,000 miles. Three of the expeditions made landfall in Calicut, while the following three trips travelled to Harmuz, Aden, the Persian Gulf, and East Africa. During the final leg of their return journey, some of their squadrons separated off from the main team to pay a visit to Bengal. An account of the naval operations written by a firsthand witness, the *Ying-yai Sheng-lan*, gives light on the economic and social life of mediaeval Indian Ocean region. According to the author, a huge number of affluent men in Bengal built ships to travel to faraway lands and establish business relations. The author admired Bengal for its vast population and abundant agricultural productions, as well as its well-developed infrastructure. In addition, some people worked as servants in far-off lands and cultures.[65] In this book, Calicut was referred to as 'the great country of the Western Ocean", and Sumatra "the principal centre of the Western Ocean". [66] For the port of Hormuz, author wrote: "Foreign ships from every place and foreign merchants travelling by land all come to this country to attend the market and trade; hence the people of the country are all rich".[67]

The true goal of such missions could have been to spread China's tribute system to the Far East. And they were successful in their efforts, as 30 states, including Egypt and Mecca, sent tribute and emissaries to the Ming emperor.[68] It was as a result of their trip that trade routes between the South China Sea and the Arabian Sea became safer. Together, the two countries waged a successful campaign against pirates in the South China Sea and a small part of the Indian Ocean. However, around the year 1433 C.E., such a naval venture by China began to fail. The subsequent Ming monarchs and bureaucrats were adamant in their opposition to invest in maritime commercial affairs. Following that, China confined itself to the northern land frontiers, despite the fact that

[65] Ma Huan, *Ying-Yai Sheng-Lan: The Overall Survey of the Ocean's Shores'* (1433), Translated by Feng Ch'eng-Chun and Edited by J. V. G. Mills, (Reprinted edition, White Lotus Press 1997), p.160.
[66] ibid, pp.137-38, 115.
[67] ibid., p.165; Since the first half of the thirteenth century, trade and shipping routes from India to the Mediterranean diverged its way from Persian Gulf to Red Sea when Mongols concurred Persia. Ports of the Gulf faced a massive crisis due to this event. Ma Huan's description of the Hormuz suggests that Hormuz perhaps persisted during this crisis.
[68] Lincoln Paine, *Sea and Civilization*, op.cit, p. 368.

she established a trading diaspora in the Indian Ocean littoral societies, which played a significant role in the exchange networks in the region.[69]

East Africa, meanwhile, became a major player in the Indian Ocean commerce. Maurice Lombard has depicted a new trade circuit in which Muslim merchants traded African ore to South India, then built swards with the African ore, and then shipped them to the Arabian Muslim world. The principal port of these triangle trading networks was Sofala.These Triangular trade networks relied heavily on Sofala as their primary port of call.[70]

Features

Emporia trade: An important feature of the trade networks is the role of current political events, which served as both a foundation and a driving force behind their rise and demise. Trade in luxury goods was boosted by both the rise of Tang China and the Abbasid Empire at the same period. Similarly, when they collapsed, the trade pattern was changed from luxury to daily consumption goods. In reality, the actual motive for the swift conquest of various eastern territories, particularly Sind, by Islamic monarchs was to gain control of the extremely profitable eastern markets.[71] Vosoughi, a scholar of Middle Eastern history, cleverly remarked: "History of the kings of Hormuz .... is the history of Iranian maritime trade"[72] Even Hormuz's commerce was totally related to its political policy. All policymaking and trade facilitation were given top importance.[73] Hormuz's merchants wielded political power in order to facilitate trade.[74]

Not an Asian Mediterranean: Although Islam was a significant factor in the network, neither a single kingdom nor a single merchant group was able to exert complete control over the trade routes. Travellers' tales from the contemporary age provide considerable evidence of coexistence between trade communities from various backgrounds.[75] The

[69] Rainer F. Buschmann, *Oceans in World History,* op.cit, p.31-32.
[70] Maurice Lombard, *The Golden Age of Islam,* op.cit, p.179.
[71] M.Redha Bhacker: 'The Cultural Unity of the Gulf and the Indian Ocean: A Longue Duree Historical Perspective', in Lawrence G. Potter(ed): *The Persian Gulf in History,*(Palgrave Macmillan 2010),p. 169.
[72] Mohammad Bagher Vosoughi: 'The kings of Hormuz: from the beginning until the arrival of the Portuguese', in Lawrence G Potter (ed), *Persian Gulf in History*, op.cit, p. 89.
[73] ibid, 96.
[74] ibid, 98.
[75] See Barbosa's account on Bengal mercantile trade, *The Book of Duarte Barbosa, Vol. II, No. XLIX*, Hakluyt Society, London, 1921, pp.135-45.

Indian Ocean, unlike the Mediterranean, could scarcely be described as a "Muslim lake." Pearson noted, "It would be incorrect to write of an Islamic Ocean. Because many others traded and travelled." [76] Furthermore, Islamic traders were divided into a plethora of sects and organisations. For example, Arabian/Persian merchants dominated the Indian Ocean trade during the seventh through the tenth centuries. However, they began to lose ground after the eleventh century, and peninsular Indian coastal Muslim merchants began to emerge and took their place.

Non-violence tradition: There was no need to construct a state navy to safeguard trade ships in India and the Indian Ocean region. Merchant ships sailed without the support of any State Navy[77], which was in stark contrast to the mediaeval Mediterranean, where commercial ships were usually supported by military convoys due to the chronic naval warfare).[78] Rulers in this region often welcomed traders from other countries, even though they belonged to different ethnic groups and religions. A great example is the King of Calicut on Malabar Coast, who enticed foreign merchants to settle in his own territory by providing them numerous specific safeguards to conduct maritime trade.[79] Using research-based descriptions, Ranabir Chakravarti explains the amalgamation or relationship between the war and trade in the Indian Ocean. He asserted that the traders in the Indian Ocean world had a strong cosmopolitan identity. [80] Abu Lughod wrote, "ships of various nations participating in trade didn't view each other as threat or enemy. They traded with each other in amiable attitude."[81]

Both trading times and routes in the Indian Ocean, as well as the fact that they all traded and travelled together at the same time (during monsoon), may have

[76] Michael Pearson, *The Indian Ocean*, op.cit,p. 62.

[77] CF. Instance of warship or piracy in the Indian Ocean could be found in some of the travelers' accounts. Ibn Babutta's account mentioned the presence of armed-men in a Chinese merchant ship. Marco Polo, a thirteenth-century Italian explorer also told a bit about piracy in Gujarat. But in general Indian Ocean trade networks were peaceful. *The Travels of Ibn Battuta, A.D.1325-1354, Vol. II*, Trans, H.A.R.Gibb, Cambridge, 1962, p. 813, 865; *The Travels of Marco Polo*, Trans, Manuel Komroff (Ed), W. W. Norton, New York, 1953, chapter-26, 52; *The Travels of Ludovico di Varthema,* op.cit.,p.*275-76*.

[78] A ruler in Sixteenth-century Gujarat at once said, "Wars by sea are merchants' affairs and of no concern to the prestige of kings". See, Lakshmi Subramanian, *Medieval Seafarers*, New Delhi: Lotus/Roli Books, 1999, p. 39.

[79] *The Book of Duarte Barbosa,* Op.cit., p.77. Barbosa gave a very cosmopolitan description about Calicut. See, pp.73-76. In Ancient times, too, such tradition was followed by many dynasties, such as the rulers of Satavahana. For Ancient India see, Ranabir Chakravarti, *Prachin Bharater. Arthanaitik Itihaser Sandhane*, (Kolkata, Ananda Publishers 2005), p.140.

[80] Ranabir Chakravarti, *'Ruling Sea: Prospect and Problems, The Indian Ocean Context, Upto 1500 A.D.'*, (In Bengali), (XIth Ashin Dasgupta Memorial Lecture, Paschimbanga Itihas Samsad 19.08.2009).

[81] Janet L. Abu-Lughod, *Before European Hegemony*, op.cit, p.*275*.

contributed to the favourable commercial environment in the Indian Ocean prior to the arrival of the Europeans. In the words of Abu Lughod "Ships tended to travel together, but mostly for mutual assistance and because propitious sailing times were so strictly limited by the monsoon winds on which all, regardless of ethnicity, depended."[82]

Port: The ports of the commercial networks can be classified according to several distinct parameters. Among the classifications used by Michael Pearson are: some ports were merely an exchange centre with no hinterland (such as Aden); some were exchange centres with a hinterland (such as the ports of the Malabar); some were ports with industry (such as Gujarat and the Coromandel Coast, all of which had close ties to the local cotton industry); and some were geographical ports that took advantage of their strategic location (like Hurmuz situated at a choke point, and also like Sofala which had a sturdy hinterland).[83]

Monetary Circulation: Another key element of the trade networks was the significant role played by precious metals, which served as a vital tool for financial circulation. Europe had absolutely nothing to offer the Easterners. As a result, she conducted business with the Orient through the exchange of precious metals such as gold and silver. Prior to the advent of Islam, the Sassanid silver coin served as an international standard currency due to the excellent purity of the silver it contained.[84] However, following the Islamic conquest of inner Africa and the discovery of gold mines, the balance of trade between Europe and Asia began to shift.[85] With the introduction of the dinar, a gold coin, it had established an Islamic monetary base among the Indian Ocean littoral societies.[86].

Extension: Merchant networks in the Indian Ocean were far more extensive than those of their contemporaries in terms of length. Before the ninth century, Muslim traders had made their way to Japan and Korea, where they were known as *waqwaq*.[87] From the key

[82] ibid.
[83] Michael Pearson, *The Indian Ocean*, op,cit, p.91.
[84]Richand Frye, *Ibn Fadlan's Journey to Russia: A Tenth-Century Traveler from Baghdad to the Volga River*, (Markus Wiener Publisher 2010), p. 146.
[85] Artur Attman, 'The Flow of Precious Metals along the Trade routes Between Europe and Asia up to 1800', in Karl Reinhold Haellquist (ed), *Asian Trade Routs: Continental and Maritime*, (Routledge 2006),p.9
[86] Mourice Lombard, *Golden Age of Islam*, op.cit,p. 221.
[87] Joseph De Somogyi, *Oriental Trade*, op.cit, p.61.

ports of the Mediterranean to the South China Sea and from Spain to China via the Levant, the Armenians and Jews, as well as the Italians, had established extensive autonomous commercial networks.[88] Indian (Muslim) traders were able to settle at the port of Aden for business;[89] even they reached Alexandria (an African port in the Mediterranean) where they occupied a dominant position in the spice trade.[90]Also the Bengali Muslim merchants travelled and settled at South-east Asia.[91]

1.3 Iberian Episode: European Networks in the Indian Ocean

In our next attempt, we will survey of the impact of Europeans on the existing exchange networks in the Indian Ocean, taking the crucial period from the sixteenth century to the eighteenth century. Here, the general history of European invasion and battle has been put to rest, and the focus is limited to highlighting the significant structural changes that the Europeans brought about in those indigenous networks. Let's start with a historiographical discussion that has generated much controversy. And that is- the impact of Europeans in the Indian Ocean, which became a subject of much debate among maritime historians. The most renowned of those who participated in this great debate were W. H. Moreland, J. C. Van Leur, M. A. P Meilink-Roelofsz, and Ashin Das Gupta. Moreland's contention that the magnitude of India's foreign/maritime trade previous to the arrival of Europeans was too little to count in tonnage sparked the controversy. This viewpoint was first represented in his book *From Akbar to Aurangzeb* (published in 1923). According to Moreland, the overall volume of India's international trade during Akbar's reign may be compared to only a few cargo vessels leaving Calcutta Port during Lord Minto's reign. He felt that the Europeans were responsible for bringing quantitative and structural changes to millennia-old trading patterns in the Indian Ocean.[92] Mooreland's assertions sparked a flurry of debate among historians, not only about the nature and character of pre-colonial Indian Ocean trade but also about some

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[88]Francesca Trivellato, *The Familiarity of Strangers: The Sephardic Diaspora, Livorno, and Cross-Cultural Trade in the Early Modern Period*, (Yale University Press 2009); Sebouh David Aslanian, *From the Indian Ocean to the Mediterranean – The Global Trade Networks of Armenian Merchants from New Julfa,* (University of California Press 2011).

[89] *The Travels of Ibn Battuta, A.D.1325-1354, Vol. II*, op.cit., p. 372.

[90] A twelve-century Jewish traveler observed the dominant role of the Indian Muslim merchants in Alexandria. See, *The Itinerary of Rabbi Benjamin of Tudela, Vol.1*, Trans, (A. Asher & Co., London and Berlin), 1840, p.157. See also, J. Ovington, *A Voyage to Surat in the year 1689*, (Asian Educational Service 1994) p.64.

[91] Reference of Muslims from Bengal in South-east Asia. *Travels of Ibn Battuta, A.D.1325-1354, Vol. IV*, Trans, Gibb, Hakluyt Society/Ashgate, 2010, London, p. 874.

[92] Ashin Dasgupta, *The World of the Indian Ocean Merchant ,1500-1800* (Oxford University Press 2001),p. 27.

of the most critical issues in Asian history, such as the timing of capitalism in the subcontinent, the nature of Asian states, merchant organisations, and trading practise. Later, Dutch historian J. C. Van Leur defended such a proposition of Mooreland and promulgated his famous 'Pedlar Thesis'. Contained with insightful documentation of row data, he strongly argued that Europeans hardly succeed to change the pattern of indigenous shipping networks in the Indian Ocean until the end of eighteenth century when their Asian empires were properly formed. Although, in his opinion, Asian trade retained its peddling character until the nineteenth century when the remarkable decline in transport cost caused its volume to soar to an unprecedented level.[93] By polishing the earlier debates, his student and one of the best scholars of South-East Asian trade Prof. Meilink-Roelofsz gave something new vision of Indian Ocean trade pattern through conducting excellent research work on Indonesian trade and European impact on it, though she also painted the picture with the same ink and in the same canvas.[94] Ashin Das Gupta made a very serious research upon Indian Ocean merchants in that period of transition. He said that India's overall political disintegration caused the demise of Indian maritime trade and that they (maritime merchants) were the victims of that breakdown.[95] Das Gupta's other well-known and outstanding research work, *Indian Merchant and the Decline of Surat*, (1979), was a study of Surat's decline as it gradually lost its position as a premier port of Mughal India due to the then-political instability of not only India but also contemporary other Asian empires.[96]

The success stories of European explorers, mariners, and merchants in the New World provoked the westerners to search a direct sea route to Asia in order to conquer the age-old imaginary lands of spectacular opulence in the Asian world, which Prof. Eric Wolf has aptly described as an "imaginary treasure house of unlimited wealth." [97] The Portuguese were the first European nation to sail directly into the Indian Ocean. Their principal goal was to seize control of the lucrative east-west spice trade routes by eliminating the monopoly of Muslim merchants in the Arabian Sea. The Portuguese impact on the Indian Ocean can be better understood by reviewing the course of their

[93] J.C.Van Leur, *Indonesian Trade and Society: Essays in Asian Social and Economic History* (Reprint edition, American Council of Learned Societies/ACLS 2008).
[94] M.A.P.Meilink-Roelofsz: *Asian Trade and European Influence In the Indonesian Archipelago between 1500 and about 1630*, Reprint edition, (Springer 2013).
[95] Ashin Das Gupta, *The World of the Indian Ocean Merchant,* op.cit, p.32.
[96] Ashin Das Gupta, *Indian Merchants and the Decline of Surat: C. 1700-1750*, (Franz Steiner Verlag 1979).
[97] Eric R. Wolf, *Europe and the People Without History*, (California University Press 2010),p. 232.

first major mission, which included thirteen warships under Admiral Cabral, who, after landing at Calicut, pounded the town for two days before returning home. In a certain sense, the Portuguese believed that by capturing important ports, erecting powerful fortifications in strategically advantageous geographical locations, and patrolling the sea lanes with a powerful naval fleet, they would easily gain control over trade routes and become the masters of the Indian Ocean. It has been demonstrated in previous discussions that Indian Ocean merchants traded peacefully, and the general trading pattern was completely unarmed. Portuguese faced a significant disadvantage because their trading goods were of poor quality, resulting in low demand for their products in the Asian market.[98] It was feasible for them to operate quietly in this realm; instead, they chose the road of violence in order to get access to the Indian Ocean's established networks. In order to wrest control of the spice trade away from Muslim merchants, they gradually captured important ports and built fortifications: at Cochin (1503), Sofala and Cannanore (1507), Goa (1510), Malacca (1511), Hormuz (1515), Quilon (1519), Diu (1536), Daman (1559). Almost every important trading station in the Indian Ocean was gradually captured by the Portuguese. Prof. Pius Malekandathil of the JNU has classified the Portuguese expansion into *three* levels. One was the formal expansion of the Portuguese government, which was initially restricted to the west coast of India and the Arabian Sea. The other was the official extension of the Portuguese government. On the other hand, there were Portuguese private traders who grew to be the most important trading merchants in the Bay of Bengal and were unhindered by Estado-da-India's control. Among the third groups were the Christian missionaries from Portugal, who served as liaisons between the private settlements and Portuguese officials.[99]

The majority of the violence occurred in these three zones. In contrast, strict government controlling instruments were implemented on the west coast of the Arabian Sea, such as the *Cartaz* system (a Portuguese official licence permitting sea trade to Asian merchants) and patrolling naval fleet to keep the pepper trade under control. There were three maritime zones that were regularly checked and controlled by their patrolling fleet: from Cape Comorin up to Cochin, then from Cochin to Goa, and finally from Goa to Cambay or the mouth of the Red Sea. The first two zones were regularly checked and controlled by their patrolling fleet. Native vessels with a Cartaz were permitted to travel

[98] Clive Ponting, *World History*, op.cit, p.520.
[99] Pius Malekandathil, *Maritime India: Trade, Religion and Polity in the Indian Ocean*, (Primus Books 2015) p.69.

in the Arabian Sea. However, they were not permitted to do so, if any vessel was found transporting items subjected to the Portuguese royal monopoly. Private Portuguese traders on the east coast of the country married local Muslim women in order to enhance their trading and economic operations. They also traded European war equipments and weapons and often supplied them to the local monarchs. Even the evidence indicated that during Shivaji's massacre of Surat in C.E. 1664, a large number of Portuguese soldiers were seen/employed in the Maratha army, indicating a relationship between the Portuguese and the regional rulers. Later on, those private Portuguese traders fortified various trading organisations in the Bay of Bengal, allowing them to compete more effectively.[100] Owing to the coming of both the Dutch and British, and particularly after 1580, when Spain annexed Portugal, the Portuguese eventually lost their commercial predominance in the Indian Ocean. It was partly due to her lack of an industrial, commercial, and colonising spirit, as well as her religious fanaticism. After C.E. 1661, she was only able to hold control over the ports of Goa, Due, and Daman until 1961, when the army of independent India conquered Goa and incorporated it into the Indian federal state structure.[101] Historians assumed that the Portuguese impacts on the Indian Ocean were minimal and short-lived. One of their important impacts on the Indian Ocean was the introduction of maritime protection cost.[102] Prior to their arrival, Asian maritime trade was conducted with very modest protection expenses, despite the presence of a significant piracy problem.[103] Another remarkable impact was the establishment of a regular overland postal/courier service as well as other forms of information networking from the Middle East to Europe.[104] This was most likely the first attempt to establish a long-distance communication network system between the two Hampshire. The Portuguese empire in Asia was also instrumental in spreading their language throughout much of the Indian Ocean coastal societies. Prof. John Darwin regarded them as more of a network than an empire, tied together by religion and language and benefiting from greater sources of market information in long-distance trade. Portuguese eventually

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[100] ibid, pp.72-73; Sanjay Subrahmanyam, *Improvising Empire: Portuguese Trade and Settlement in the Bay of Bengal, 1500-1700*, (Oxford University Press 1990); Jayaseela Stephen, *The Coromandel coast and its Hinterland: Economy, Society and Political system,1500-1600*, (Manohar 1997).

[101] Joseph De Somogyi, *Oriental Trade*, op.cit, pp. 113-14.

[102] Dietmar Rothermund, *Violent Traders: Europeans in Asia in the Age of Mercantilism*, (Manohar 2014), p. 63.

[103] Philip D.Curtin, *Cross Cultural Trade*, *op.cit,* 137. For the evidence on local piracy see, *The Book of Duarte Barbosa,* op.cit.,p.193.

[104] Pius Malekandathil, *Maritime India*, op.cit, pp. 164-65.

became the *lingua franca* of maritime Asia as a suitable language for conducting business.[105]

Following the Portuguese, the Dutch and the English were the major European powers that not only transformed the pattern of Indian Ocean trade, but also affected the power structure of Asia. It was the age of 'capital accumulation' when they built joint-stock companies such as English East India Company (EIC) in C.E. 1600 and the Dutch East India Company (VOC) in C.E. 1602. Since multiple investors operated these commercial organisations, they could mitigate the risk associated with long-distance maritime shipping and reduce the chance of bankruptcy. The establishment of such joint-stock companies in Europe has recently been interpreted in academia as the 'expansion of western nation states' into the 'New World,' because those companies possessed some unique political authority, were capable of conducting wars and negotiating peace treaties independently in foreign lands and possessed their own naval forces, armies, and guns.

French influence on Indian Ocean trade was similar to that of the Portuguese; they were unable to establish a firm foundation in the Indian Ocean until the beginning of the eighteenth century, as was the case with the Portuguese. Instead of South Asia, the Dutch centred their power on South East Asian possessions, capturing Banda in 1620, Malacca in 1641, Colombo in 1656, Cochin in 1663, and Bantam in 1682. As historian Holden Furber has pointed out, the Dutch exercised greater political control and deployed more brutality in the Indian Ocean than any other European state. Even against Asian country shipping, they used the *Cartaz* system more mercilessly than the Portuguese. The Portuguese used the Cartaz to safeguard their royal monopoly on specific items, whilst the Dutch used it to eradicate native shipping in the Indian Ocean, much as they had done so successfully in Java and the Ceylon Sea.[106] For reference to the readers, it is noted here, that once the Dutch confiscated ships included goods valued at a million rupees, which belonged to the Mughal emperor Shah Jahan in the year 1649 C.E. However, they were unable to maintain command over European ships that were not Dutch.[107]

[105] John Darwin, *The Rise and Fall of Global Empires, 1400-2000*, (Penguin Books Ltd 2008), p. 56.
[106] Holden Furber, *Rival Empires of the Trade in the Orient*, (University of Minnesota Press 1976), p. 268.
[107] ibid, p. 269.

Features

Structural division: European overseas trading companies were structured differently from other mercantile groups. These entrepreneurs were operated on the principles of joint-stock policy, which enabled them to pool significant amounts of capital and construct an intricate infrastructure consisting of forts, ports, and harbours as well as ships, all of which encouraged greater trading activity.[108] On the other hand, historian Ashin das Gupta argues, Indian traders were organised around informal organisations of groups and families, which he asserted would lead to divisions and strife among them. [109]

Coastal shipping: These contrasts led to a progressive fall in Asian/Indian proportion of trans-oceanic shipping, forcing them to rely on coastal trade, which was mostly for local consumption rather than export oriented economy.[110] Some researchers believe that after losing their rights to trans-oceanic trade, Indian coastal populations, such as the Mappilahs of Malabar, turned to piracy.[111] On the contrary, Prof. Dionisius Agius, a historian of Islamic dhows argued that piracy in the Indian Ocean was always an endemic in character and merely acted for menace only. This trend is even continuing up to recent times.[112]

Shifting of centres: Another feature was the shift of trade from old centres to newly established ports, like Surat replaced Cambay, Bandar Abbas replaced Hormuz, Calcutta replaced Hooghly, and Bantam replaced Malacca.[113] Also, trading commodities of the Indian Ocean trade contributed to the rise and demise of Asian port cities such as the rise of Mokha on the Red Sea was the result of the thriving coffee trade.

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[108] Niels Steensgaard, *Asian Trade Revolution of the Seventeenth Century: East India Companies and the Decline of the Caravan Trade*, (University of Chicago Press 1975).

[109] Ashin Dasgupta, *The World of the Indian Ocean Merchant, op.cit*, see introduction.

[110] An army officer who travelled across the Indian Ocean between 1789 and 1790 noted that even in Indian coastal trade European merchant ships were occupied a considerable proportion. See, Grandpré, L. de, *A Voyage in the Indian Ocean and to Bengal*, *Vol. 1*, Trans, (G. and J. Robinson, London, 1803) pp. 228-30. Not only the Indians but also the half-caste (Anglo-Indian) people of Indian territory had only a trivial engagement in country's maritime trade and not in trans-oceanic shipping. See, *Minutes of Evidence taken before the Select Committee on the Affairs of the East India Company, Vol. I Public*, (Appendix and Index), 1853, p.301. Cf. However, a contemporary account contained descriptions about the active involvement of Asian/indigenous traders in overseas trade. See, John Henry Grose, *A Voyage to the East Indies: Began in 1750 with Observations*, *Vol. 2*, London: (folded by S. Hooper for the author), pp.234, 239-40.

[111] Tirthankar Roy, *India in the World Economy*, op.cit., p.99.

[112] Dionisius A. Agius, *Classic ships of Islam from Mediterranean to Indian Oce*an, (Brill 2014) 247. Cf. J.Ovington, *A Voyage to Surat in the year 1689*, Loc.cit.

[113] Clive Ponting, *World History*, op.cit, p.528.

Marine employment: According to Arasaratnam, opportunities for marine employment rapidly developed from the seventeenth century onwards due to increased commerce and shipping in the Indian Ocean, particularly in coastal locations. The need for mariners and seafarers was relatively high. Professor Arasaratnam asserted, "those who were engaged in small boat traffic between ship and shore and up the estuaries of rivers and inland waters would have experienced a boom in their service" [114]

Tools of maritime empire: Europeans introduced many advanced long-distance navigational technology or tools like charts, instruments, knowledge of routes, sturdier, which enabled them to control the oceans.[115] Both the size and number of European ships increased gradually:

Table no. 1.A Development of Dutch Fleet

Year	No of Dutch ship	Total tonnage
1665	9	3,750
1735	30	20,000

Source*:* Clive Ponting, *World History: A New Perspective*, (Pimlico Random House 2001) 527.

Coastal integration: One of the most significant effects of European shipping on the Indian Ocean was the integration of coastal lands and people. Gujarat, Kanara, and Malabar were integrated into a unified commercial system. To a similar extent, communities throughout India's east coast and all the way to Coromandel formed strong bonds. Gujarat and Malabar developed close ties, and Bengalis learned more about the Coromandel people. Individuals from various parts of littoral Asia were consuming one another's agricultural and industrial products at the same time.[116]

Composition: The composition of commercial items moving along the Indian Ocean was constantly changing. When it comes to Asian exports to Europe in the first half of the seventeenth century, spices dominated the composition of the trade. However, over the next hundred years, the composition of Asian exports to Europe shifted to textiles,

[114] Sinnappah Arasaratnam, *Maritime India in the Seventeenth Century*, (Oxford University Press 1994),p. 271.

[115] A.R.Lewis, 'Maritime skills in the Indian Ocean, 1368-1500', *Journal of the Social and Economic History of the Orient* 16(2/3), 1973, pp. 238-64.

[116] ibid, 273-74. For instance, Bengal began to consume the salt prepared and imported from Pondicherry. Grandpré, L. de, *A voyage in the Indian Ocean and to Bengal*, *Vol. 1*, op.cit., p.84.

saltpetre, Chinese silk. Finally, Chinese tea (particularly green tea) replaced all these by the second half of the eighteenth century. [117]

Dependency: During the expansion of these European trading systems, the Europeans were heavily reliant on Indian/Asian traders for the conduct of their business,[118] and a group of indigenous middlemen emerged who worked for European commerce and exchange. They included bankers, moneylenders, crew members, and local vendors. The ship-owning merchant class, which included people like Abdul Ghafoor, was the most powerful of them, as he controlled a huge number of ships that were mostly engaged in west Asia trade.[119]

Ports: Economic historian Tirthankar Roy has noticed a new and considerable feature of European made port cities around the Indian Ocean. He observed, the ports were no longer solely used as an exchange centre for the outer world but were also beginning to exert influence in the interior. Previously, ports had not wielded any impact on their hinterland. He claimed that such a connection had never existed before in Indian history.[120] The newly established ports could create their individual laws for business (as Bombay, Calcutta, and Madras did). According to Professor Roy, the three cities were, 'world apart from the Indian littoral spaces'.[121]

1.4 Aftermath

> theirs was a good country, and that it entirely lay within their own breasts to make themselves happy and considerable in it by encouraging trade, by making the duties and taxes to be imposed upon it light and easy to the fair trader, and granting foreign merchants their protection and free navigation, at sea at an easy rate, which was, the true policy of all great minds who proposed to render themselves considerable in the world. (An English envoy to Marathas)[122]

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[117] Tirthankar Roy, *India in the World Economy*, op.cit, 93; Dietmar Rothermund, *Violent Traders*, op.cit, p. 95.

[118] The picture of collaboration in trade between European and Natives even persisted till the eighteenth century, and it had reflected in many contemporary accounts. See Grandpré, L. de, *A voyage in the Indian Ocean and to Bengal*, *Vol. 2*, Trans, (G. and J. Robinson, London, 1803), pp.19, 28-29.

[119] Tirthankar Roy, 'Capitalism in India in the very long run', in Larry Neal and Jefferey G. Williamson (eds), *The Cambridge History of Capitalism: Volume 1:From Ancient Origins to 1848*, (Cambridge University Press 2015),p. 177.

[120] Tirthankar Roy, *India in the World Economy,* op.cit, p. 122. It should be noted that Ports in the Indian Ocean were not totally free from imperial control. There are instance where sea ports faced political subjugation from many imperial authorities. See, *The Travels of Ludovico di Varthema, A.D. 1503 to 1508*, op.cit., p. 224; *Indian Archaeology - A Review*, *2006-07,* p.53.

[121] Tirthankar Roy, *India in the World Economy,* op.cit., p. 121.

[122] *Selections from the State Papers, Bombay Secretariat, Maratha Series, Vol.1*, 1885, p. vii.

How justified would it be to put an end to our discussion since the steam arrived in the Indian Ocean? Did *S.S. Enterprise* – the first steamship entered in Indian Ocean – and its later successor ships which were more modern, and evolved in their mechanisms, supplant our millennia-old indigenous maritime tradition? It does, however, deserve a more thorough and documented investigation.[123] Although keeping a watch on the Indian Ocean's history for the next 200 years can reveal some of the significant developments brought about by steam. The traditional sailing ships were replaced by the newbie ships, which were propelled by the power of a steam engine; As a result, the monsoon winds lost their pre-eminence in oceanic exchange, which they had held for centuries. Existing trading posts were considered to be dejected, while new ports such as Calcutta and Bombay emerged as game-changers in the climax. Indian shipbuilding industry and Indian/Asian sailors both suffered setbacks.[124] Indigenous maritime merchants were stripped of their rights to trade along historic shipping lanes, and they were barred from participating in any deep-sea sailing. Western industrialization also altered the structure of capitalism in the Indian Ocean, since traded commodities changed their composition from precious and luxury goods to consumption-based

[123] Sources and records of the EIC depicted quite a complex picture. The Steamships might win the race to beat off their rival traditional Asian merchant ships but they were not quietly exterminated from the Asian water. A captain named John Mackie, who used to command Spanish ships in China trade around 1829-30, mentioned that many *junks* were engaged in foreign trade between Amoy, a port town of China and Singapore, and their size was also big, about 500-600 tons. See, *The Fifth Report from the Select Committee of the House Of Commons on the Affairs of the East India Company*, (Minutes of Evidence), 1830, p.405. Furthermore, even after the foundation of European imperial rule over the Indian Ocean realm, Asians continued to hold a significant part of the workforce in a variety of maritime sectors, such as the ubiquitous role of Parsees they held in dockyard construction. See, George Viscount Valentia, *Voyages And Travels To India, Ceylon, The Red Sea, Abyssinia, And Egypt, Vol. 2*, (William Miller, London 1809), p.179.

[124] Till the first decade of the nineteenth century, Indian build ships, and Indian shipping industry enjoyed pretty support from the side of EIC or British government. Indeed, one officer, Col. Walker, and Governor General Lord Wellesley, both expressed concern to the British government about the possibility of building ships in India, which would save a lot of expenditure. Calcutta, till the end of the eighteenth century, was one of the greatest shipbuilding places in the whole of Asia. However, the situation altered after 1814, when Indian shipbuilding enterprises were subjected to a variety of imbalanced and prejudiced British laws in comparison to their rival British counterparts. Even an order of the Court of Directors in 1801 restricted the proportion of the employment of Indian sailors in any British owned ship. In the whole British period, Indian shipping constituted only 0.8% share in India's total oceanic trade and only 11% in inter-coastal trade. The total volume of Indian maritime trade in British period, worth approximately 345 crores, was hinged on 85% share of foreign ships. See, Grandpré, L. de, *A voyage in the Indian Ocean and to Bengal, Vol. 2,* op.cit., *p. 17.* Radha Kumud Mookerji, *Indian Shipping: A History of the Sea-Borne Trade and Maritime Activity of the Indians From the Earliest Times* (1912), (Reprint edition, Munshiram Manoharlal Publishers 1999), pp. 254-55; Sumati Morarjee , *Indian Shipping Through the Ages*, op.cit.

commodities.[125] But the most unwanted or unfortunate was obviously the changing nature of business practice. The more the British Empire spread its wings over the Indian Ocean territory, the more peaceful and multi-national character of Indian Ocean shipping lost its way and was being confined only within the control of the British navy. This was truly an egregious intrusion into the essence and character of Indian Ocean shipping. The peoples of the Indian Ocean world had to wait another two centuries to undo the situation. It was in the immediate aftermath of World War II that Asian maritime trade in the Indian Ocean surged to a level never seen before, that prompting a modern scholar to coin the term "re-emergence of Asian shipping."[126] Indian Ocean has now become the centre of global capitalism, trade and politics (albeit, containerization again initiated the proneness of west-centric dependency on the matter of technological improvements of shipping industry). In all these situations, the steam unquestionably served as a major milestone.

1.5 Observations

We have described extensively the development, characteristics, and eventual demise of long-distance shipping networks in the Indian Ocean until the ocean became a "British lake." We also focused on trade-creating forces, shipping, the diversity of traded items and changes in their composition over time, documented important structural changes in those networks necessitated by various local and international elements, and provided light on the impacts of networks and exchanges on human history. It would be difficult to reach a single conclusion on a subject that covers nearly 4000 years; it had numerous ups and downs, a variety of criteria, and, above all, a vast ocean space that stretched from the Far East to the West. However, the preceding discussions touch on a few essential remarks. It has been noticed that a sharp distinction existed between the Ancient, Muslim and European shipping networks in the Indian Ocean. Ancient networks were inextricably linked to or deeply connected with the traditional shipping tradition. There is evidence of state sponsorship in ancient maritime trade and shipping, albeit in too little a quantity to be mentioned. In contrast, mediaeval Muslim networks in the Indian Ocean

[125] Although recent works show that Indian maritime communities and their shipping networks converted themselves into coastal shipping where they were in hegemonic position. See, Michael Pearson, *The Indian Ocean*, op.cit, p.194; Chhaya Goswami, *Globalization Before its Time: The Gujarati Merchants from Kachchh*, (Penguin Books 2016),p. 130-85

[126] Frank Broeze, 'From Imperialism to Independence: The Decline and Re-Emergence of Asian Shipping.' *The Great Circle*, *Vol. 9, No. 2*, (1987), pp.73–95.

were nearly totally reliant on large empires, including their emergence, persistence, and eventual collapse. From the fifteenth century, *three* elements began to contribute to the Indian Ocean merchant shipping networks: overseas market demand, international flows of precious metals, and the development of shipping technology. The shipping networks of India, as well as the Indian Ocean, also showed considerable flexibility; merchants married local women in foreign countries or relocated to faraway areas in order to conduct business more efficiently. Another distinguishing trait was the absence of any state-sponsored navy. In the absence of a uniform code of maritime law, shipping was conducted on the basis of overall mutual understanding and open competition. If the Europeans made any structural alteration in Indian Ocean shipping, it was undoubtedly the integration of the Indian Ocean with the emerging world economy. Any serious maritime history scholar will wonder if one can construct the story of the origins of modern capitalism without mentioning the Indian Ocean context!

CHAPTER - 2

IMPEDIMENT VERSUS OVERCOME :
CONTAINERISATION IN THE PORT OF CALCUTTA

CHAPTER BRIEFING

This chapter has depicted the historical development of containerisation of Calcutta Port. It paid some special attention to depict its long early historical development since the early modern period and shows that before the coming of the British in Bengal, the shores and waterfront of Bengal were already connected with the expanding worldwide networks of commerce and trade. However, after the arrival of the EIC, its intensity and depth heavily increased, and for the growth of commerce, the British established Calcutta as a modern port. This chapter further argued that the selection of the site of Calcutta port proves that the present location of Calcutta Port was the best choice among all failed attempts of the British to set up a modern port. Using data, this chapter discusses in detail the maritime trade of the Calcutta Port in the nineteenth century, the war and depression effects, the development of the port facilities after independence, the growth of trade in the sixties and the advent of containers. Using a large section of archival records, both government and private, this chapter argues that Calcutta was much more serious about developing containerisation, and due to being a riverine port, it got some special privileges, which further helped invest its surpluses in container facilities. By the end of the century, container trade successfully occupied one of the largest shares of the sources of its income. It also pays attention to various multiparty agreements and cooperation between the port trust and the international development institutions, which proved instrumental in increasing the port's potential in container shipping.

The Port Before the Trust: An Early History of Maritime Bengal— The Port during the RAJ –War and Depression— Development of the Port After Independence—War Effects and Reconstruction: A Precondition of Containerisation— Preparing for Containers: The Five-Year Plan— Containerisation and Conference Systems in the 1970s and 1980s—Liberalism Trumpet—Containerisation Probed Feasible —Conclusion

Chapter -2

2.1 The Port Before the Trust: An Early History of Maritime Bengal

Historically, the lower Bengal delta interacted with other countries and communities through maritime exchange. *Tamralipti*[1]was an old port in Bengal that effectively developed commerce and cultural links with distant outside countries or societies via maritime trade.[2] In the past, King Ashoka sent his son and daughter to Sri Lanka (*Tamraparni*) with the intention of spreading Buddhism. Both of them travelled to Sri Lanka by way of an ocean-going ship that passed through this port. It flourished until the birth of Christ, and its fame spread across the entire Indian Ocean, from the Near East to China. Its growth continued until the birth of Christ. However, by the tenth century, it had completely perished as a result of natural problems.[3] In addition to Tamralipti, there were a great number of additional ports along the coast of the lower Bengal delta that were utilised for international trade and shipping, such as *Samandar*. In general, the position of a port within a province, region, or country is indicative of the degree to which it is connected to the rest of the globe. In addition, the success of a port is evidence of the economic prosperity of the surrounding area. On the other hand, in order to evaluate the factors that led to the development of a port, it is essential to make an estimate of the economic conditions that exist in any region or country. It was in the previous chapter that we talked about the interconnections between merchants from the Indian Ocean and the function that politics plays as the primary stimulant in international trade and exchanges. This chapter will begin by examining the economic situation in India and Bengal during the 18th century. It will also shed some light on the international economy during the same century and tell the story of the ongoing British interest in the Hugli River. All of these factors, taken together,

[1] Tamralipti was ancient Bengal's main port, located in what is now the District of Midnapore, West Bengal. Many historians argued that Tamralipti was the exit point for the trade in the Mauryan Empire to Southeast Asia. It is referred to as *Tamelities* in Ptolemy's Geographia. It gradually declined following the fall of the Gupta Empire and was fully ruined by the tenth century A.D.

[2] Akhil Kumar Sahoo: 'Tamralipta: The Ancient Port in Odisha' , *Odisha Review*, *June,2013*, pp.47-50

[3] Dennison Berwick: *A Walk Along the Ganges*, (Poole and Sidney ,Javelin Books,1987),p.30.

ultimately led to the rise of Calcutta as the most important port in modern India, meeting international standards at the time.

Many scholars see the 18th century as an extremely turbulent period in both Indian and world history. For India, it was the period of the establishment of the English order or the beginning of the colonial ages, and for the world, it was the beginning of the industrial revolution. For some historians, the Indian economy was very weak in the eighteenth century due to the decline of Mughal law and order, which supported trade and commercial activities. Moreover, 'invaders from outside, warring armies and plundering bands of *Sikhs*, *jats* or *Marathas* disrupted trade and commerce'. Once the British had taken over and won the other fights, they were able to enforce law and order. This led to what they called "Pax Britannica", a long period of peace that allowed the economy to take shape again.[4]

Recent scholarly works question this view of 18th-century Indian economics. Their key point is that the eighteenth-century Indian economy was 'neither flourishing nor ruined' due to regional variances. But overall, they showed prosperity. They argued that Long-distance trade, a single monetary system, and connections between subcontinental financial centres integrated the 18th-century Indian economy. For instance, there are statistical records in Rajasthan which show the increasing area under cultivation and growing more valuable crops that were undoubtedly traded out of the province. In Maratha province, price, population and area under cultivation all increased. Also in Bengal, there was a marked extension of cultivation.[5] David Ludden has shown in his research that the use of money was spreading very widely during the century. Cash was the main form of payment for wage labour; even small cultivators paid their tax in cash.[6] Therefore, it can be argued that the Indian economy in the 18th century was sufficiently prosperous to support a colonial port.

On the southeast coast, there were sufficient preconditions for the growth of new colonial ports. On the East Coast, the ports of the British, the Dutch and the French

[4] P.J. Marshall (ed): *The Eighteenth Century in Indian History: Evolution or Revolution*, (New Delhi, Oxford University Press,2011),p.13.

[5] *Ibid.*,p.15.

[6] David Ludden: 'Tributary State' ,in P.J. Marshall(ed):The *Eighteenth Century in Indian History*, *op.cit.*

lived well.[7] In that period, one of the important facts is that India's seaborne trade with West Asia, the Red Sea and Persian Gulf were began to sink and trade with Malaya, Sumatra, Java or china were developed rapidly. So demand from countries outside India for textile amd raw silk, sugar, etc had important consequences for coastal areas such as *Gujarat*, *Coromandal* or *Bengal* delta.[8] The English and Dutch companies' record shows a great regional shift in export commodities to Europe from West Indian Ocean to Bay of Bengal or Bengal, from 1720 A.D. there was considerable growth of volume of shipping.[9]

Irfan Habib has shown some statistical analysis that will help us to prove a prosperous trade and commercial activity in Bengal. We can get some statistics of bullion flow from Europe to India in his analysis. The East India Company purchased Indian textiles for the slave trade in the Atlantic Ocean.[10] For purchasing Indian textiles, they used silver as a means of transaction between native/Bengali traders. In 1757 A.D., they exported treasure from England to India amount of £797,167,[11] which clearly indicated a growing foreign trade. We know well that the growth of foreign trade is the most crucial and vibrant factor behind establishing a port. The economy of Bengal in the 18th century was and still is a very popular field that attracted many scholars and historians. Bapti Sur had made an excellent survey of the interconnection between the overseas trade and urbanisation in early modern Bengal. Following the contemporary literary sources, she has pointed out that the overseas trade fostered much of the growth of Bengal's towns and their population.[12] Bengal's merchant fame was widespread in Malacca.[13] But many conventional, nationalist and revisionist views existed regarding the question of whether Bengal at the time of English penetration was a prosperous state or not. We need not discuss these debates, but much of the well-researched work by historians proves that, though after the death of Aurangzeb,

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[7] *Ibid.*,p.16.
[8] *Ibid.*, p.17.
[9] *Ibid.*, p.17.
[10] *Ibid.*,p.110.
[11] *Ibid.*,p.111.
[12] See for details, Bapti Sur: 'The Story of Bengal's Urbanization: Role of trade in the Early Modern Period', in Pius Malekandathil (ed): *The Indian Ocean in the Making of Early Modern India*,(New York,Routledge, 2017).
[13] *Ibid*,.

several Indian regions fell into anarchy and political disintegration, Bengal was a happy exception. Sushil Chaudhury mentioned,

> Throughout the first half of the eighteenth century political and economic affairs in Bengal were conducted with vigour and efficiency...provincial administrative system in Bengal appears to have grown stronger.[14]

Bengal was one of the ideal places for trade and commerce. For example, it had a large production area based on agriculture, with a good and cheap riverine transport network facility and low-cost labour.[15] The region also enjoyed political and administrative stability, which fostered trade and commerce. The court of directors in London wrote in 1735 A.D.: "Bengal is not the cheapest part in India to live in, but perhaps the most plentiful country in the whole of the world."[16] And not only in the 18th century but also from the time of Emperor Akbar, Bengal had a great repute in seaborne trade and commerce. Historian R.C.Majumder gave us an excellent general introduction about the broad network of Bengali business communities in early modern times. Shipbuilding industries were a major field in Bengal, especially on the two sides of the bank of Dhaka. Its cotton, sugar, opium, *ghee,* etc. were exported to the Far East and West Coromandel, Sri Lanka, the Maldives, Persia and Mesopotamia and Japan. Even Bengal's wheat was used to make *biscuits* for the ocean-going European merchants and sailors.[17] Dr Majumder gave several medieval literary sources that had a lot of evidence on large sea-going ships. Among them, one is a little Sanskrit book named *Jukti Kalpataru,* which gave a lot of references regarding the large-scale Bengali ships. Even Italian traveller Nicolai Conti said in his account that in the 15th century, Bengal's ships were far greater and immense in size than any European ships.[18] The mediaeval poet Kakbikankan Mukundaram in his epic *Chandimangal* writes about

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[14] Sushil Chaudhury: *From Prosperity to Decline: Eighteenth Century Bengal*, (Delhi, Manohar Publishers and Distributors,1995), p.10.
[15] *Ibid.*,p.133.
[16] *Ibid.*,p.25.
[17] R.C.Majumder: *Bangla Deser Itihas*, *Vol-2*, Maddhya Jug, (Calcutta, General Printers and Publishers, 2003),pp.218-19.
[18] *Ibid.*,p.221.

how Bengali traders did business with the outside world and what goods they were selling:[19]

বদলাশে নানা ধন আন্নাছি সিংহলে।
যে দিলে যে হয় তাহা শুন কুতূহলে।
কুরঙ্গ বদলে তুরঙ্গ পাব নারিকেল বদলে শঙ্খ।
বিরঙ্গ বদলে লবঙ্গ দিবে সুঁইএর বদলে ডঙ্ক (টঙ্ক?)।
লবন বদলে সন্দক দিবে জোয়ানি বদলে জিরা।
শুক্তার বদলে মুক্তা দিবে ভেড়ার বদলেঘোড়া।[20]

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So, in general this condition positively helped to build a port for shipping and commerce. Even modern scholar like Tilottoma Mukherjee, further gives an argument that market and commerce had been existing well till the first period of the company's intrusion.[21]

Bengal had two other overseas ports which were used for long-distance shipping before rise of Calcutta as a modern port . They were *Satgaon* and *Hughli* situated in modern Hooghly district. *Satgaon* had played as the premier port of medieval Bengal before the rise of *Hughli*. It was situated on the bank of *Saraswati River*. But soon after 1632 when the Mughals had transferred the customhouse at *Hughli* from *Satgaon* then its function as a port began to decline.[22] The reduced flow of water in the *Saraswati* River was also the cause for losing its importance as an overseas port as the large ships could not enter the port.[23] One of the important causes of its decline which most modern historians generally overlook was the transfer of capital from *Gaur* to *Tanda* by sultan Sulaiman Karrani around 1565 A.D.[24] Because it was the main hinterland of *satgaon* and the decline of port *Satgaon* and the decline of capital gaur coincided at the same time which cannot be overlooked. Though *Satgaon* continued as a major urban

[19] *Ibid.*,p.222.
[20] Cited in R.C.Majumder(ed): Bangla Deser Itihas, Maddhya Jug, Sixth edition,(Kolkata, General Printers and Publishers Private Limited, 2003)p.222
[21] Tilottama Mukherjee: 'Commodities, Trade and Economy of Bengal: A Reassessment of the Early English East India Company State', In S.Jeyaseela Stephen(ed): *The Indian Trade At The Asian Frontier*, (Delhi, Gyan Publishing House, 2008).
[22] Aniruddha Ray: 'The Rise and Fall of Satgaon: An Overseas Port of Medieval Bengal', in S.Jeyaseela Stephen (ed): *op.cit.*, p.92.
[23] *Ibid.*, p.93.
[24] *Ibid.*, p.96.

town till the end of the 18th century,[25] perhaps it worked as a major supplier of *Hughli* port.

After *Satgaon*, the story of the rise and decline of *Hughli* as an overseas port is very important and relevant for understanding the rise of Calcutta port. It was the Portuguese who established the *Hughli* port because they were not able to enter *Satgaon* with large ships.[26] Though Portuguese traders were expelled from *Hughli* at 1632A.D. by Mughal officials but very soon after one year they were again welcomed and got permission for trade. Later several years the *Hughli* became the most prominent overseas port of Bengal and eastern India. It became the main emporium of trade where vessels of India, China, Malaya and Manila were repaired in great numbers.[27] After the rise of *Hughli*, *Chittagong* as a port became commercially important, which has been reflected in the contemporary Portuguese account. After the rise of *Hughli* as a port, the Portuguese called it '*Porto Grande* (meaning the Great Haven), the name by which *Chittagong* was known to the Portuguese.[28] So it clearly proved that *Hughli* replaced the latter within a very short time. *Hughli* had not only acted as a port for exporting commodities from Bengal, but also the Portuguese had used it to export commodities from the neighbouring territories. *Hughli* had a strong internal link with the market of *Patna*.[29] After the capture of *Hughli* in 1632 A.D. it became the 'royal port of Bengal'.

After the Portuguese, the Dutch in the 17th century were the chief merchants for exporting trade at Hughli.[30] Besides the Dutch, the English company had also brisk trading activities at *Hughli*. Historian Sushil Chaudhuri gave us an excellent research based on description of English activities at Hughli port and also their interest in Hughli River which made the rise of Calcutta port. At first the English were not interested in trade with Bengal because Bengal products were readily available at *Masulipatnam*. But after the famine of 1630 A.D. their policy was changed. The English

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[25] *Ibid.*, pp.93,96.
[26] Sushil Chaudhuri: 'The Rise and Decline of Hugli: A Port in Medieval Bengal', *Bengal past and Present, Vol. LXXXVI, Part 1, Sr.no. 161, January-June, 1967* , Reprinted in Sushil Chaudhuri: *Companies, Commerce and Merchants : Bengal in the Pre-Colonical Era*, (New Delhi, Manohar Publishers,2015),p.4.
[27] *Ibid.*, p.7.
[28] *Ibid.*, p.7.
[29] *Ibid.*, pp.9,10.
[30] *Ibid.*, p.14.

had first established their factory at *Hughli* in January 1651 A.D.[31], they made it the general clearing house of Europe-Asia export trade and shipping.[32] But again the English did not reach with their sailing ships to Hughli and landing their sea-bound ships at Hooghly was not possible due to the deterioration of this river. They used *Ballasore* as a 'transit port'. They procured items of export from various factories at *Malda*, *Cassimbazar*, *Patna*, *Dacca* etc and brought all that merchandise through *Hughli* by waterways. From *Hughli* the same were again sent to *Ballasore* by local sloops. Similarly the imported goods were traded vice versa.[33] The first English ship intended for Hughli despatched in 1650 A.D., was *Lyoness,* but it did not enter the Hughli port. In 1662 A.D., an English captain Elliot proposed that the vessels could go directly to the *Hughli* port and *Ballasore* should be abandoned. His proposal was later accepted by the court.[34] But that proposal could not make the *Hughli* River navigable by English ships because they had no skilled pilot. Local pilots were so expensive and for that reason the owners refused to send their ships without proper pilots and charts. To solve the problem, the court built a small vessel, named *Diligence* which could survey the depth of this river. As a result in 1672 A.D., *Rebecca* a vessel of 200 tons, made this journey up and down in safety with the help of *Diligence.* Later this endeavour continued and in 1678 A.D., the first ship named *Falcon* entered into *Hughli* with a value of £40000 cargo. It was only after 1680 A.D., that ships of the English company began to load and unload cargoes regularly at *Hughli* instead of *Ballasore*.[35]

The efficiency of this new port is clearly reflected in the rapid growing of company's investment and bullion flow from England to Bengal as follows:

Table no. 2.1, EIC's Bullion of Investments in Bengal

Year	Company's Investment
1668	£34,000
1674	£85,000
1680	£150,000
1682	£230,000

[31] *Ibid.*, p.17.
[32] *Ibid.*, p.18.
[33] *Ibid.*
[34] *Ibid.*, p.19.
[35] *Ibid.*, p.20.

Source: Sushil Chaudhuri: 'The Rise and Decline of Hugli: A Port in Medieval Bengal', *Bengal Past and Present, Vol. LXXXVI, Part 1, sr.no. 161, January-June, 1967*, pp.33-67.

The above figure shows us clearly the rapid growth of the volume of trade of the East India Company in the port of *Hughli*. Chaudhuri mentioned that on average, 4 ships of the company came to Bengal every year between 1670-1680A.D., from England and returned with merchandise.[36] *Hughli* also became the port for trans-Asian traders as many merchants from Asia gathered here. The English company had settled trade relations with Persia, and they exported a huge quantity of sugar to.[37] *Hughli* became a colony of many Asian traders, like the Persians. In the 18th century, merchants like *Agha Fazlullah* from Persia and *Agha Motaber* from Ispahan settled at the port of Hughli. [38]*Hughli* port began to lose its importance from the middle of the 18th century, and Calcutta replaced *Hughli* as the main port of colonial Bengal/India.[39] And by 1735 A.D., Calcutta became an important port and commercial centre.[40] This decline is further proved by the statistics of port dues and customs dues as follows:

Table no. 2.2, Rise of Customs Dues in Hughli Port

Year	Port/Customs Dues of Hughli
1768	Rs.91,196
1773	Rs.62,644

Source: Sushil Chaudhuri: 'The Rise and Decline of Hugli: A Port in Medieval Bengal', *Bengal past and Present, Vol. LXXXVI, Part 1, sr.no. 161, January-June, 1967*, pp.33-67.

The economic impacts of the Battle of Plassey at particular historic Bengal ports, such as Hughli, directly demonstrated the continuing reduction of import and export trade from the aforementioned table. For raising the importance of Calcutta as for trade and Commerce hub from this period roughly after 1790, *Hughli* started declining rapidly and the East India Company had been paid much interest on Calcutta. The causes of both the decline of Hughli port and the rise of Calcutta port are interestingly integrated. So there is no need to discuss the causes of the *Hughli's* decline

[36] *Ibid.*, p.21.
[37] *Ibid.*, p.23.
[38] *Ibid.*, p.24.
[39]Sushil Chaudhury: *From prosperity to Decline: Eighteenth Century Bengal*, *Op.cit.*,p.24.
[40] Cynthia Clark Northrup (ed): *Encyclopedia of World Trade: From Ancient Times to the Present*,*Vol-1*,(Armonk, M.E.Sharp,Inc., 2005),p.136.

separately as we will later discuss the factors behind the rise of Calcutta as a modern port.

2.2 Global Opportunity: Economy and Maritime Trade

The causes of the rise of Calcutta as a modern port didn't lie only within internal events but also external factors were responsible for that. Since the end of the 15th century Europe had experienced a growth in economics, trade and technology and within a century this growth had dramatically increased. It was due to the recovery of political stability in most parts of Western Europe and in England.[41] The growth of trade could be seen easily in the development of ship design and types, both from small island vessels to ocean-going ships.[42] The variety of types and designs continued to grow throughout Europe. From that time, the trading cargo ships were distinguished from warships.[43] It had a global impact overall, as Prof. Richard Unger asserts, " division between the two types over seventeenth and eighteenth centuries led to great savings the for the world economy " [44]

From this time, open sea navigation was developing. In previous time the naval guns were made of bronze but after the invasion of casting iron technology the guns were made of iron which cost less expense and thus the merchant navy could carry more and more guns for overseas voyages.[45] Some scholars like Louis Sicking, marked it as a 'Naval Revolution'.[46] This kind of development in shipping technology further extended in the 18th century English merchant vessels began to carry more than 200 tons of cargo and also the estimated times of voyages diminished, the cost of shipping reduced and the size of vessels grew.[47] The 18th-century English merchant vessels generally ranged from 150-250 tons, total crew of 15-25 men, armed with 15-20 cannon.

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[41] Richard W.Unger: *The Ship in the Medieval Economy*(600-1600),Reprint edition, (New York, American Council of Learn Societies, 2008), p.251.
[42] *Ibid.*, p.252.
[43] *Ibid.*
[44] *Ibid.*
[45] C.M.Cipolla*: Before the Industrial Revolution: European Society and Economy 1000-1700*, (London and New York, W.W. Norton & Co., 1994), p.148.
[46] Louis Sicking: 'Naval Warfare in Europe, c.1330-c.1680', in Frank Tallett and D.J.B.Trim(eds): *European Warfare 1350-1750*, (New York, Cambridge University Press, 2010), p.236.
[47] C.M.Cipolla: *op.cit*, p.147.

In England, the idea of the steamboat flourished in 1736 A.D, by Jonathan Hull, to use to tow sailing craft into and out of harbour.[48] This type of development in shipping construction was a common incident all over Europe.(for instance, in Scotland, steamboat technology was improved by William Symington at the same time).[49] Coastal shipping also rose in that period and it became the main transport system throughout the 18th century.[50] More than half of the Navigation Acts in England were passed between 1758 to 1802, which boldly supports this argument.[51]

Another important event, the growth of population in Europe and in England occurred quite dramatically from 1850 to 1870 A.D. In 1850 A.D, it increased by 66 million from 1815; in 1870, again, Europe experienced continuous growth of population, consisting of a total of 295 million. In England and Wales in between 1851 and 1871 A.D., 5 the population had increased.[52] This growth of population had created a great sphere of trade for food and grain supply, which at last gave birth simultaneously the tremendous growth of world trade, which historian Eric Hobsbawm called 'the great boom of 1870'[53] From the 1850s, cotton goods became the chief commodities of British export trade. Hobsbawm has marked it as the 'vanguard of market penetration'.[54]

According to Eric Hobsbawm from 1850 to 1870 A.D, the quantity of world trade increased by 260% and at the same time, interestingly, the opium trade from India/Calcutta to China also increased twofold and trebled in value. In 1844 A.D, the total number of opium was 43,000 chests; in 1864 it became 87,000. Not only foreign trade but also Europe's internal trade and industries experienced same kind of growth in those years.[55] As the industries required more raw material and a market for its productive goods thus ports then got some special attention from the many European governments and merchants as it is the main hub of export and imports. Cobden treaty

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[48] Eugene S.Ferguson: 'Steam Transportation', in Melvin Kranzberg and Carroll W.Pursell (eds): *Technology in Western Civilization*, vol-1, (New York, Oxford University Press, 1967), p.286.
[49] *Ibid*, p.287.
[50] Phyllis Deane: *The First Industrial Revolution*, (Cambridge, Cambridge University Press, 1982), p.77.
[51] *Ibid.*, p.79.
[52] David Thompson: *Europe Since Napoleon*, (London, Penguin Books, 1990), p.251.
[53] Eric Hobsbawm: *The Age of Capital: 1848–1875*, (London, Abacus, 2004), p.45.
[54] *Ibid.*
[55] David Thompson: *Op.cit*, p.255.

in 1860A.D, between France and England gave further impetus to the intra-European trade.[56] Treaty of Tientsin in the same year was important for the improvement of Asian ports as the Britain and France agreed to open new ports for world trade and they reduced the tariff to 5% for imports and exports in Indian Ocean waters.[57] As a major export region of European companies the Bengal had experienced some growth of trade with Europe since the second half of the 17th century especially with Holland.[58] The invasion of some new gold mines in California and Australia made availability of bullion which was an extra stimulus behind the growth of international trade.[59] Thompson argued that the expansion of railways and stable conservative government in Europe was the main backbone for the growth of world trade.[60]

2.3 Where to Anchor? In Searching for the Ideal Site

As a port of overseas shipping, *Hughli* had several limitations which compelled the English to resettled them at Calcutta. *Hughli* was far ahead of the sea by a long, hazardous and unsafe journey. Also, it was unsafe from any native invaders as it was situated on the west bank of the river, so it was open to attack from the land. On the other hand, Calcutta was much nearer to the sea and free from any European and Asian rivals for trading activity.[61] Moreover, the position of Calcutta at the lower reaches of the river made deep water channels and anchorages available, which were lacking at *Hughli*. It was the northernmost suitable point from the sea for shipping.[62] In 1713 A.D., the Court of Directors enquired from the council at Calcutta regarding building a warehouse and in reply, the Court wrote:

> Whether the country merchants do not trade to Surat, Persia and other places yearly from Bengal, whether they do not send their goods on Europe or European's shipping, whether such goods are not providing by them all the year long to be ready against the time of shipping, whether if such goods are lodged at Calcutta and they could be sure they were safe there and to be come there wherever they would, the warehouse rent at Calcutta

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[56] *Ibid.*

[57] *Ibid.*, p.216.

[58] Om Prakash: *The Dutch East India Company and the Economy of Bengal*, *1630-1720*, Reprint edition, (Delhi, Manohar Publishers and Distributors, 2012), p.201.

[59] Eric Hobsbawm: *Op.cit*, p.49.

[60] David Thompson: *Op.cit*, p.252.

[61] Cynthia Clark Northrup (ed): *Op.cit.*, p.137.

[62] Scholars have different views about which was the highest point in Hughli river for mooring. Some recent scholars assumed that *Sutanuti* was the highest point at which the river was navigable for sea-going vessels. For the above view see, *Calcutta Port: Ageless Annals- Reflection In Print and Memory*, (Kolkata, Kolkata Port Trust, 2010), p.33.

> being at as cheap a rate as it cost them hugely would not in a few years and in how many pay for the charge of building substantial and fit warehouse for that use?, whether such goods so housed at Calcutta could not with more ease and expedition to shift off thence on fright then from Hughley...*63*

The above statements by the court clearly indicate that they realised the potential advantages of Calcutta more than any place in Bengal for trade and shipping. Prof. Sunil Kumar Munsi, a reputed scholar of Indian urbanization gave some alternative reasons behind the English interest in Calcutta for establishing a port. He mentioned that Calcutta was a flourishing commercial centre for both Indian and European merchants even before the English had settled here. The *Armenian* merchant family had come and settled at *Sutanuti* and *Gobindapur* before 1630 A.D., and within a decade built up *Armanitola* in the northern part of the present city.[64] He further mentioned that the Portuguese at that time had anchored their ships at *Garden Reach*; as a result, a populous and splendid market rose at Betor, very close to Calcutta port.[65] Another important fact he mentioned is that during the decay of the port of *Satgaon*, 4 families of *Bysacks* and one of *Setts*, leaving the port and resettled at Calcutta near Fort William(now) and established a market near *Sutanuti* and then they began trade first with the Portuguese and gradually with the English merchants in a very friendly manner.[66] It can be assumed from the above events that perhaps the native merchants ever invited the English to come and build a port for their trading activity. Thus, Prof. Munshi boldly concludes as follows:

> It is evident that one of the major considerations for selection of the site of the city of Calcutta (port) was the existing settlements, their large population and the initial opportunities of trade. [67]

In Calcutta, among the Asian merchant groups, the Armenians were the most prominent one. Here I am again emphasising these trading communities because of their close ties with European companies. Their presence was a common feature in all

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[63] *Ibid.*, p.30.
[64] Sunil kumar Munsi: *Dynamics of Urban Growth in Eastern India*, (Kolkata, Thema publishers,2011), p.104.
[65] *Ibid.*
[66] *Ibid.*, p.105.
[67] *Ibid.*,p.104.

the economic spheres of Bengal at that time- in markets, buzzer, Ports etc. The court of director of the English company observed in 1689A.D,

> This people are (Armenians), close, prudent sort of men that travel all India over and know almost every villages in Mughal's dominions and every sort of goods with such a perfect skill and judgement as exceeds as ancientest of our linen drapers[68]

Again, the court wrote to their Bengal employees in 1690A.D, , '*they know how to buy better than you can'*.[69] Among them, *Khoja Wajid* was the most powerful merchant in Calcutta, who had not only a large business network in India but also worked for the procurement of Bengals raw products for supplying to the European merchants.[70] So these kinds of facilities undoubtedly attracted the English to establish a port in Calcutta.

2.4 Abundant Plans but Absent Outcomes

Now we are going to take a narrative of some infrastructural growth of the port of Calcutta from its infancy. Scholars like Prof. Tirthankar Roy wrote that till the mid of the 19th century Indian public works specially merchant marine/ports saw a great indifference towards spending money on reliable infrastructure.[71] For instance he notes the example of Calcutta port, which lacked between 1833A.D, to 1863A.D, with all the modern docking systems, loading and discharging cargoes. It was only with the cyclone of 1864 that he believed that Calcutta port began to develop with modern infrastructural growth.[72] Such a story or narrative was not quite true if we take a short tour of the history of Calcutta port from its origin. It is said that from the year of English settlements in Calcutta to the establishment of the port trust in 1870 A.D, this period was the 'history of plans, projects and commissions, much was proposed but nothing was done'.[73] The internal factors of the colonial Indian economy and trade at least did not affect the growth of modern port/docks developments in Calcutta. It was

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[68] Sushil Chaudhury: 'Armenians in Bengal Trade and Politics in the 18th Century', in Sushil Chaudhury and Keram Kevonian(eds): *Armenians in Asian Trade in The Early Modern Era* ,Reprint edition, (New Delhi, Manohar Publishers and Distributors, 2014),p.149.

[69] *Ibid.*

[70] *Ibid.*, pp.151,152.

[71] Tirthankar Roy: *The Economic History of India 1857-1947*, (New Delhi, Oxford University Press, 2012), p.242.

[72] *Ibid.*, p.243.

[73] Nilmani Mukherjee: *The Port of Calcutta: A Short History*, (Calcutta, The Commissioners for the Port of Calcutta, 1968), p.34.

only the growth of world trade and some world forces (like the opening of Suez) that led to the establishment of the modern Calcutta port.

The port of Calcutta is more historic, antique and older than the metropolis of Calcutta. The river Hughli gave birth to the port, and the port gave birth to the Calcutta town. The places like *Kidderpur*, *Barrackpore*, *Garden Reach* have been all indicated on most of the English sailing charts from 1651 onwords.[74] Though scholars like Ranjit Sen mentioned, English had first felt the necessity of a port/dock in Calcutta on 16th November, 1767 A.D.[75] In the early period, Calcutta port had very little port dues, not more than Rs. 500 per year.[76] So at that time the port had very little infrastructure for shipping and loading cargoes. The English ships in the 17th century were unable to reach up to Hughli port and thus they established regular pilot service in the Hughli River in 1668A.D, called 'Hughli pilot service' to abolish the uncertainty of skilled sailors availability. Later, it became known as 'Ganges Pilot Service' which was active after the independence till 1968A.D.[77] By 1709 A.D., the warehouse of the port was built with mud and bricks. But very soon the council gradually paid much attention to the development of its infrastructure as they ordered to build it solid and concrete. After 1711 A.D., the port began to take a modern shape as many internal and external factors were put in place to improve the port facilities possible. One was the beginning of the Napoleonic/European war that increased the demand for saltpetre, which was the chief ingredient of gunpowder.[78] It is well known to us from modern Indian history that Bengal and *Patna* were the then, the main markets for its export trade. The fear of Maratha invasion had resulted in another important development by constructing of Maratha Ditch in 1743 A.D. Moreover, after the decline of Surat, the English had brought changes to the direction of trade from West Asia/Arabian seas ports to the Bay of Bengal as the decline of Mughal, Safavid and Ottoman Empire lost the market integration of western Indian Ocean. The growing interest of the bay is clearly indicated by the number of sailing ships in Calcutta fleet. Roughly between 1709-10 and 1722-23, the number of ships in the Calcutta fleet rose from 10 to 40. And after a slight

[74] *Calcutta Port: Ageless Annals- Reflection In Print and Memory*, *Op.cit.*,p.32.
[75] Ranjit Sen: *A Stagnating City: Calcutta in the Eighteenth Century*, (Calcutta, Institute of Historical Studies, 2000), p.26.
[76] Nilmani Mukherjee: *Op.cit.*,p.25.
[77] Radharaman Mitra: *Kolkata Darpan*, vol-1, (Kolkata, Subarnarekha,2008), p.147.
[78] *Ibid.*,p.26.

decline in next decades, it rebounded again in 1783 A.D., when a total of 128 English private ships passed through Calcutta port. In 1783A.D, it went up to 591 !79 But perhaps the most important 'prime mover' was the continuous visitations of cyclones which used to destroy the port almost every year. Prof. Nilmani Mukherjee remarked, after the devastating effects of the cyclone of 1734, "Calcutta (port) looked like a place that had been bombarded by an enemy."80 Every year the cyclone damages the port and shipments. So, as a result, the British government then decided to improve the facilities and accommodation of the port. All that time, one of the biggest problems was from the Portuguese and *Mags* pirates. They used to raid Calcutta for collecting slaves, as it was a main business of that time. A chain had to be run across the Hooghli River between Calcutta port and Sibpore to prevent them.81

The battle of *Plassey* (1757A.D.) was a great turning point not only in history of Bengal but also in history of Calcutta port. After Plassey however this period, as categorised by Philip Curtin a reputed historian of world trade is the period of transition from 'Trading Post Empire to territorial states' due to European success in military and artillery skills.82 After *Plassey* the English not need to pay taxes and so trade flourished very rapidly with a very big turn. Even after *Plassey*, Opium a new highly profitable trade began in Bengal in which the European merchants and traders had succeeded in displacing indigenous merchants. The opium was collected from *Bihar* and rural Bengal and then redistributed/shipped to many south East Asian ports and canton through Calcutta port. By the 1820s opium trade provided almost 10% of total Bengal's revenue.83 Such picture of prosperity could be found similarly in the 18th century England also when British export trade with Europe had enormously grown 75%, in total of her all exports. 'By 1790s Europe was absorbing between 80 and 90 per cent of Britain's re-exports', in which the West Indies, Far East and probably including India were supplying about half of Britain's imports.84 This development of trade had an

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79 *Calcutta Port: Ageless Annals*, *Op.cit.*, p.56.
80 *Ibid.*,p.27.
81 *Ibid.*
82 Philip D.Curtin: *Cross Cultural Trade in World History*, (New York , Cambridge University press, 1992), pp.230-32.
83 P.J.Marshall: *Bengal: The British Bridgehead Eastern India 1740-1828*, The New Cambridge History of India,II.2, (New Delhi, Cambridge University Press,2006), pp.110,111.
84 Phyllis Deane: *Op.cit.*, p.57.

effect on the sea born trade of the port of Calcutta which made another force for new kinds of port improvements. In 1772A.D, a little pamphlet called *Hari Lila* written by Jainarayan, a portrait of a *Baishya* merchant of Bengal who travelled to almost 25 business centres all over the Indian subcontinent, even as far to China. In the same year, another merchant named *Chandrakanta* a *Gandhabanik* in caste who had sailed to Gujarat with 7 ships full of commodities for selling.[85]18th century historian Peter James Marshall, who had done several research studies with a great repute on Bengal economy has a view that though English and other European merchants replaced many Indian traders but in reality they could not change the internal market and overland trade of Bengal which he assumed was totally in the hands of Bengali merchants. It was only the overseas trade of Bengal, as he argued which was taking a new shape.[86] During the first 60 years of British rule the volume of Bengal's overseas trade increased rapidly.

The great effect of *Plassey* on the port was further noticeable explicitly with the establishment of 'Marine Branch', a separate administrative unit with lots of power. 'The Master Attendant' was the head of this branch. He was responsible for repairing the company's vessels and he kept records of all incoming and outgoing vessels. He was ever bound to send reports to court of directors each year regarding condition of marine facilities, docks and shipping. Even he had given the power to appoint and dismiss officers and sailors.[87] This endeavour further extended when the directors had suggested in 1768 A.D, for some further improvement in marine branch. As a result of this concern, at last the government built the first dry dock in Calcutta in 1790 A.D., which became popular later times as *Bankshall Ghat.*[88] At the same time, an old channel was re-excavated by Major W.Tolly in 1775 A.D., much of this project was done by his own expenditure and it opened up in 1776A.D, for the improvement of Calcutta port. Known today as *Tolly's Nullah* it was 17 miles in length extended from *Kidderpore* to *Fardaha,* thus had connected the river Hughli with *Bidyadhari.*[89] The real motive for excavating this canal was to bring the goods and grains of eastern Bengal and lower Assam to Khidirpur as the only existing route from Assam and eastern Bengal to

[85] R.C.Majumder: *Op.cit.*,pp..224,225.
[86] *Ibid.*,p.114.
[87] Nilmani Mukherjee: *Op.cit.*, p.29.
[88] *Ibid.*,p.30.
[89] *Ibid.*,p.32.

Calcutta was very difficult and full of hazards, and it took a lot of time to arrive.[90] The route from Assam to Calcutta could be journeyed only with the help of some rivers in small boats and thus the total shipping time was not less than 6-7 weeks. This problem of shipping goods and transportation was not resolved until the year 1848A.D, when East India Company first established a regular steamer service from Calcutta to Guwahati. Later, this project was handed over to *India General Steam Navigation Company* in 1860A.D.[91] Later the government took the royalty of this canal(Tolly Nullha) from Major Tolly's wife in 1804A.D.(the royalty of this canal was handed over to Tolly's wife after his death).[92] Another interesting feature was the story of Calcutta shipyards which were situated 15 miles below Calcutta near *Uluberia*. Between 1811 A.D., to 1828 A.D., a total of 27 ships were built there. Another famous centre of shipbuilding and dockyard was near *Barrackpore*. But it is very sad to conclude that not only Bengal silk/Maslin but also this shipbuilding industries of Bengal began to decline after establishment of British rule. Those shipbuilding industries declined due to widespread jealousy in England among all the dockyards that were being lose their profit and importance.[93]

In the year 1842 A.D, the port of Calcutta faced several infrastructural causalities due to the great Hurricane occurred in this year. As a result a committee was appointed for improvement. The committee held its first meeting in 1844 A.D, decided to construct a wet dock at *Kidderpore*. After that proposal many plans were prepared, costing was almost done for this project successful but again like its predecessors nothing was done. Several years later Lord Dalhousie received such kind of proposal to build wet docks and an outlet port at *Malta* River from two reputed engineers.[94] So it can be clearly assumed that hints of deterioration of Hughli was these among many port engineers, officers and employers and it became a critical issue for the port of Calcutta. Lord Dalhousie's government took some possible steps to investigate the condition of Hughli River. In 1853 A.D, the chamber of commerce proposed the government establish a port on *Malta* River, which could be connected with Calcutta

[90] Radharaman Mitra: *Op.cit*,p.152.
[91] *Ibid*., p.151.
[92] *Ibid*.,p.157.
[93] Nilmani Mukherjee: Op.cit, p.32.
[94] *Ibid*,p.35.

either by rail or by canal. But the viceroy did not agree with this scheme as he did not accept their argument about the possible death of Calcutta port. Finally these endeavours came into existence during the reign of Lord Canning with the construction of wet docks and develop of port in *Malta*. It came to use for shipping and trade very soon after 1865 A.D. and within a year total of 26 ships had visited. But almost 5 years later this successful scenario was changed dramatically as no single ship used to visit thereafter. Possibly the unsafe geographical position and deterioration of Malta itself were the causes behind its decline. Finally the port was officially closed in 1871 A.D.[95]

This kind of approach to establish an outlet on Malta fostered by Chamber of commerce and the government, was deliberately changed. It was a well-established fact after many plans and projects that Calcutta would be the most perfect place for building a modern port. After this era much was done to improve the *Hughli* River to make it navigable. As for instance Captain Reddie, Master Attendant of Calcutta port wrote a letter to the government to get a dredger from England and few years later in 1867 A.D, a steam dredger named- *Agitator* was arrived at Calcutta port and worked in the *Hughli* with satisfactory output! Further improvement for the port of Calcutta was done a committee for the formation of a River Trust.[96]

The years from 1860-1870 A.D., were a very crucial time in world history for the development of the communication and transport revolution. In India after the great munity of 1857A.D, as the Indian empire was then brought under direct control under the British crown, the government paid greater interest in several public works such as developing roads, canals and ports. Those 'Social Overhead Capitals (SOC)'[97] had far-reaching effects on the economic development of India. The improvement of communication by means of railways, steamships, canals, telegraphs and cables began to change both the face and fate of India. After 1857, large-scale inland steam navigation was developed, and construction of railways and their expansions linked the

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[95] *Ibid*,P.36.

[96] *Ibid*,p.37.

[97] Social Overhead Capital or 'SOC' is a modern terms generally use in Developmental Economics which defines to include transportation means Roads, Damps, Ports, Docks, Canals, Warehouse , Bridge, Electricity, while in a wider sense, it includes all public services, including Law and Order, Ed ucation, Health and especially Bank ,Economic and Commercial sectors. These services mentioned earlier are assumed to the critiques of business economics as the basic fundamental requirements for production and industrial growth.

country's hinterland and markets with the ports. Also in 1865 A.D., the first telegraphic connection between India and Europe was established, which linked India with the outside world. Later, it became 'The Indo-European Telegraph Company' in 1868A.D.[98] Previously, by 1855 A.D., Delhi was connected with Peshawar and Calcutta with madras and Bombay. In 1858A.D, it reached to Sri-Lanka even.[99] But the most revolutionary event of communication occurred with the opening of the Suez Canal in 1869A.D. It shortened the route between England and India by 4000 miles. Also, in this channel, a number of ships crossed were more British than other European nations.[100] This opening led to the establishment of trunk lines from England to Indian ports. This kind of transport and communication development also changed India's economic structure from agricultural to industrial in nature, as by this time jute mills began to establish and cotton industry was taking its growing shape. From this decades, food crops were replaced by cash crops. Prof. Nilmani Mukherjee argued that this kind of local and global changes had direct impact on Indian ports development like Calcutta.[101] Moreover the foreign trade during this period through Calcutta port had doubled having risen from Rs.19,13 to Rs.40,53 crores. So the government was interested in building and developing the marine facilities of the Calcutta port for developing maritime trade.

This interest paved the way to the birth of a River Trust in 1866 A.D.[102] However this trust had failed within only 16 months and therefore the administration of the Calcutta port was handed back to the government.[103] Later the lieutenant government of Bengal had written to the government of India about the necessity of establishing a trust for the port and the city of Calcutta. In the first stage of this discussion, it was decided to join the port trust with the Calcutta municipal corporation. But soon the government of India raised the opinion that the trust should be separated from the municipal corporation for betterment of the port improvement. Furthermore

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[98] For further discussion see, Andre Karbelashvili: 'Europe India Telegraph Bridge Via the Caucasus', *Indian Journal Of History Of Science,26(3),1991.*

[99] Anton A. Huurdeman: *The Worldwide History of Telecommunications*, (New Jersey, Wiley Blackwell,2003), p.113.

[100] David Thompson: *Op.cit.*, p.256.

[101] Nilmani Mukherjee: *Op.cit.*, p.39.

[102] Sunil kumar Munsi: *Op.cit.*,p.106.

[103] Animesh Ray: *Maritime India: Ports and Shipping*, (New Delhi, Munshiram Manoharlal Publishers Pvt. Ltd.,1995),p.70.

the government cited the case of port Liverpool where the city of Liverpool had the right to collect dues on shipping from the port. This kind of customs could hamper the development of Calcutta port if the trust were to work jointly or under the Calcutta municipality.[104] But unfortunately, this kind of anxiety again rose when in 1866 A.D., a bill for the improvement of the port of Calcutta, introduced in Bengal Legislative Council appointed the municipality of Calcutta as the port trustees. As a result, the Bengal chamber of commerce and some mercantile communities of Calcutta were protesting against this bill without success. Finally in 1866 the first river trust for improving the port of Calcutta came into being by the Act X(B.C.). Hugh Leonard was appointed as the chief engineer of the trust and after a year in 1867A.D, he wrote a pamphlet named*, Improvement of the port of Calcutta* in which he outlined some projects for developing the port of Calcutta.[105] Several years later, in January 1870, a bill for the improvement of the port of Calcutta was introduced in the council with the object of building a permanent body for the port administration. At last a new Act V was taken in the month of October this year and it came into effect on October 17, 1870 the natal day which gave the birth of *Calcutta Port Trust*[106], the premier port of India. After that the port of Calcutta was regarded in colonial times the '*Gateway of Eastern India.'*[107]

By the Act V of 1870, total numbers of commissioners were fixed at 9 including chairman and vice-chairman. V.H.Schalch, member of Board of Revenue was appointed as Chairman and W.Duff Bruce was appointed as Vice-Chairman of port trust.[108] The most remarkable achievement by the commissioners of the port trust in its beginning year was the extreme modernization of the port like the improvements of jetties to meet the import trade. Import warehouse registered, registered of vessels discharged, tally books and so many equipments were bound to keep on each jetty so that information regarding overseas trade could save.[109] So in this complicated and

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[104] Nilmani Mukherjee: *Op.cit*, p.41.

[105] Ibid.,p.43.

[106] Ibid., p.50; Animesh Ray: *Op.cit*.,p.70.

[107] Sadananda Gupta: *Shipping Industry In India: Colonialism to Globalisation, A Spatio-Temporal Analysis*,(New Delhi, Pentagon Press,2016) ,p.26.

[108] Kolkata Port Trust Archives (Henceforth as KPTA),Secretary's Department File No. 0/799, part-1, 1870-1877.

[109]KPTA, Memorandum from J.A.Crawford, collector of Customs, to the Commissioners of Port Trust, Proceedings of the Meeting of the Commissioners for Making Improvements in the Port of Calcutta,Vol.1,October 1870-March 1871,Memorandum no.3.

entangled way Calcutta port trust was born and it could be said that after 1870A.D, the history of the port was the history of the work of Calcutta Port Trust.

2.5 The Calcutta Port During the Raj

From the mid-19th century of the 19th century Indian Ocean was purely controlled by British hands. But this achievement did not come dramatically. It had a long history of how the British became the chief ingredient of India's overseas trade. We will discuss the trade of the Indian Ocean as well as the overseas trade of the Calcutta port within 3 unequal parts as follows: 1757-1813, 1813-1914 and 1914-1947. This categorisation has been done according to the changing nature of the Indian Ocean trade and its relation with the Calcutta port.

A. Transition Period

The period from the battle of Plassey to 1813 can be regarded as the period of transition both in terms of structural changes and the changing pattern of India's overseas trade. Prof. K.N.Chaudhuri, the most renowned historian of Indian Ocean trade characterised India's overseas trade in this period as remained only a 'pre-modern character'. He gave many considerable supporting arguments against his assertion. One of the important points of his arguments is the lack of serial one-handed empirical import-export data (which could be found easily after 1850s). In other words, during this period there was the absence of continuous series of trade statistics for the whole of India.[110] It was partly because many trading partners and groups both native/Asians and Europeans traded in Indian Ocean before 1800 (though their share was not equal with each other).

The EIC, the VOC and the French company were the main among the European companies who conducted the overseas trade between Indian Ocean and Europe. The second groups were some of the foreign Asian merchants and traders, like Armenians and Arabs largely engaged in trade with the Middle East. It is worthwhile to note here that these Asian merchants were a part of old Indian Ocean exchange network that dominated the trade of Indian Ocean before the coming of

[110] K.N.Chaudhuri: 'Foreign Trade and Balance of Payments (1757-1947)', in Dharma Kumar (ed): *The Cambridge Economic History of India*, *vol-2*, Reprinted expanded edition,(New Delhi, Orient Longman ,2008), p.813.

Europeans. The third group belonged to some native Indian born merchants. They were from Guajarati merchants of Surat, *Chetti* merchants of southern India and some Hindu merchants of Bengal. The last one among the four groups was the private traders of European companies operating mainly intra-Asian port-to-port trade. They had a licence from their respective companies. An important fact is that all of these groups of merchants were important according to their sphere of influence. But dramatically at the mid of the 18th century, especially after the Plassey, it could be noticed explicitly from the statistical data from table no.1A that the EIC or the English became the dominant figure in India's/Bengal's overseas trade as below ;

Table no. 2.3, Trade between India and Europe (1780-90)

European nations	Imports into India (£)	(%)	Exports from India (£)	(%)
Dutch, French, Danish, Portuguese	992,640	41.5	2,757,763	37.6
English trade under foreign flags	615,300	25.7	2,000,000	27.3`
EIC Private Trade	439,000	18.4	403,565	5.5
EIC	346,070	14.4	1,962,095	26.8

Source: K.N.Chaudhuri: 'Foreign Trade and Balance of Payments (1757-1947)', in Dharma Kumar (ed): *The Cambridge Economic History of India*, *vol-2*, Reprinted expanded edition,(New Delhi, Orient Longman ,2008),p.817.

The mentioned data in the above table shows clearly that after 1757, total of English exports and imports including private traders was more than the total of all Europeans import and exports. Moreover it also noted that Europeans exports were not equal to their imports. Their export from India to Europe was slow down and being handed over to the EIC and English merchants. The causes of success of English as well as EIC were their continuing growing control over the politics of Bengal. After the Plassey and following the battle of Boxer, they got the rights to collect the revenue whole of Bengal Bihar and Orissa. In the mid half of the 18th century there was a trend in large investments of bullion in Bengal by the European companies for collecting mercantile commodities which finally caused the fluctuation of money in Bengal. For instance, before 1765, the EIC had a large import of bullion trade in amount from £

7000,000 to £1 million.[111] But after the *dastak* in 1765, the English could control the silver supply or monetary system and they could also invest those money (gained by the revenue) for buying tea and silk in china. In that time a small group had emerged in Bengal/Indian business class, the private merchants who within very short time became the dominant part of Bengal's external trade. They settled a very strong tie with the indigenous merchants and producer to secure the export goods. In that way the English replaced all their counter native merchants and rival European merchants, reduced gradually their share and established a dominant position in maritime trade of Bengal, Madras and Bombay.[112] In that time trade was carried by simple rules, which the select committee remarked it as the 'common principal of commerce'. In other words it means that the company had relied on free competition in the local market to secure its export goods. Thus by the end of the 18th century the English had established themselves as a prime mover of Asian –European trade which is marked by K.N.Chaudhuri as 'an unlawful entry into the purely internal and external trade of India'.[113] By the end of this century India was well connected with Australia in the British hands. The first ships from India arrived in Sidney in 1793 with a cargo of livestock. The period from 1808-1825 more than 90 ships came to New South Wales from India.[114]

It is important to note that after Plassey general trends of export commodities from Bengal had changed and raw silk, both in quantity and value entered the export trade of Bengal, and within two years of the battle it also replaced the pepper. The result of the growing maritime trade of Bengal was reflected in the British activities in Calcutta port. After the Plassey, one major improvement of Calcutta port within a year was the establishment of Marine branch/department under a Master Attendant. It controlled the pilot service and kept records of vessels using the Calcutta port. Later the court of director had recommended some improvements of Hooghly River.[115] The growth of the private trade was a matter of concern to the EIC as well as british

[111] *Ibid.*, p.814.
[112] *Ibid.*, p.815.
[113] *Ibid.*, p.814.
[114] Michael Pearson: *The Indian Ocean*, (London: Routledge, 2009), *Op.cit.*, p.196.
[115] Animesh Ray: *Maritime India: Ports and Shipping*, (New Delhi, Munshiram Manoharlal Publishers Pvt. Ltd.,1995), p.67.

government. As a result 'Board of Trade' was constructed in 1774 to control the private trade . In charter of 1793, private traders in britain gained some marginal concession. They had a statutory claim of 3000 tons on the shipping of the company for their private trade. But the government did further steps against their profits as fright rates had fixed to £5 per ton on the outward voyages and £15 on the inwards which was not so cheaper for their export trade at that time. But unfortunately this certain steps by the EIC as well as govt did not effect the interest of the private trader's overseas trade. The 'reporter of the external trade of Bengal' himself stated in 1797 that the export trade by sea had increased five-fold from the province during the previous 20 years.[116] Before 2 decades ago major Tolly's successful attempt in making a canal later re-named by the governments as the *Tolly's Nulla* was one of the important evidences for supporting the remark made by the 'reporter of the external trade of bengal,' as because the main purpose of this canal was to bring the goods and merchandise of the eastern bengal to calcutta port directly within a shorter times. There are many noticable exemples of the developemnst of calcutta port after plassey. Plan for construction of wet/dry docks, land grands for the name of port like watgunge, construction of first dry dock in 1790 at Bankshall, developemnts of shipbuilding in and around calcutta were among those developemnts which was the results of growing maritime trade.[117] Thus by the end of the 18th century Indian Ocean trade remained only to the hands of british traders and the role of native ships as well as traders became insignificant.

B. The State, the Company and the Modern Trade

The period roughly from 1814 to 1850s, could be regarded as an era of beginning modern overseas trade in Indian Ocean history. There are several reasons behind this assertion. Within this short period some important structural changes happened in Indian trade which has categorised by many trade historians as the period of the 'beginning of modern trade'. Firstly, in that period India experienced general trends of continuity of upheaval in both her export and import goods. Short time business cycle within this period would be another reason. Thirdly, according to many historians this period witnessed remarkable trends in overseas investment of Britain in her colonies and the gap between the time of investment and its output or consumption was very

[116] K.N.Chaudhuri: 'Foreign Trade and Balance of Payments',in Dharma Kumar (ed): *Op.cit.*,p.824.
[117] Animesh Ray: *Op.cit.*, p.68.

short-lived. It is possible to make an all India pattern of Indian export-import trade in the mentioned period. Because each province used different currencies and their method of calculation was varied region to region.[118] However we can underline some general characteristics of this period. The period from 1814 to 1819 witnessed a boom in staple export trade from Bengal. Possible reason was perhaps the high shipping cost, £20/Ton that encouraged enough to the shipper or shipping agents who associated with the Calcutta port /Indian Ocean shipping. Rise of price in export goods from 100% to 200% was another reason which gave enough encouragement to the producers and suppliers for over exports. More they export/produced, more they earn! End of Napoleonic war in Europe in that same time affected badly the motion of international sea trade as after the Waterloo (1815), major seaports of Europe turned to open for trade. The exports reached a peak in 1817-18, when it was higher 40% than 1814-15. Such a glorious history of Indian Ocean trade did not persist later as within a decade the share of imports replaced the share of export trade of India as well as Indian Ocean. In the year 1817-18 imports were 88% higher than the previous 5 year.[119] After 1829-30, Indian seaports witnessed a great boom in export trade and from this time India was being converted from an exporter of commodities (like cotton) to a supplier of raw materials to the west, became itself a big market of fine British manufactured goods, the products of British industries for sale and consumption. This kind of development in Indian sea-borne trade had affected the governmental policy. In the year of 1835 Lord Bentinck appointed a committee for take care of the functions of the marine department and did several steps for the improvements of pilot service in Calcutta port.[120] Economic historian K.N.Chaudhuri's deep concern about the changing nature of Indian trade easily visible in his comment as follows,

> For the first time in her commercial history, India was not only being supplanted in her traditional area of exports but also stood in the position of an importer of manufactured goods from Europe.121

Possible reasons for the sudden fall of Indian exports were many. After 1817 cost of shipping reduced to 6£/Ton, so shippers were faced a loss in overseas shipping,

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[118] K.N. Chaudhuri, Foreign Trade and Balance of Payments, *Op.cit.*, pp.826,827.
[119] *Ibid.*, p.830.
[120] Animesh Ray: *Op.cit.*, p.68.
[121] *Ibid.*

price of export goods also declined.[122] Another important cause was the government act of 1833 which imposed a restriction upon the company in export trade of Indian goods. This reduction of export goods in Indian Ocean closely associated with the sudden demise of the agency houses in Calcutta. The agency houses were worked as a mediocre between the EIC merchant and Indian producers or native sellers for supplying Indian goods or merchandise. The era after 1833 was an era of the decline of agency house in Calcutta. Simultaneously demand for Indian goods in the west was fall dramatically due to depression in overseas market. All of these circumstances had led to the decline of India's role in the export trade of the Indian Ocean.

It is worthwhile to note here that the process of extraction of native traders and merchants from their indigenous routs by the EIC and later following by the policy of British government is not out of questions. Some Economic historians of modern Indian trade paid serious attempt to discuss this issue. Many of them have assumed the view that indigenous traders and merchants particularly in Calcutta gained a great fortune for profit in the field of shipping, overseas or internal trade and commerce by the commercial activities of EIC and British governmental policy. For example *Banians* were such a group who were acted a middle man of European-Asian trade and the European merchant was willing to pay higher rate of interest to them for borrow money. Peter Marshall wrote that "Loans to Englishmen were obviously an attractive form of investment for the indigenous banians. From the European point of view, the rates (loan) were disagreeable high, rarely falling below 9% and often reaching 12%" [123] The banians continued to play an important role in European trade in Calcutta well even to the 19th century. The relationship between the banians and his masters was like a partnership in which both sides had important part to play.[124] Their service as a commercial agent became increasingly attractive after 1757.[125] Thus Marshall further comment, that "Rather than driving Indian merchants out of business altogether, the British conquest of Bengal seems to have forced them to come to terms with the

[122] *Ibid.*

[123] Peter Marshall: 'Masters and Banians in Eighteenth Century Calcutta', in Blair B. Kling and M.N. Pearson (eds): *The Age of Partnership: Europeans in Asia Before Dominion*, (Honolulu, The University Press of Hawaii, 1979),p.202.

[124] *Ibid.*, p.201.

[125] *Ibid.*, p.204.

conquerors and either enter into genuine partnerships with them or became their nominal clients.."[126]

In the mid half of the 19th century, the sudden growth of export trade from Calcutta as well as in the Indian Ocean had a noticeable impact on the society of the then Calcutta. The years from 1833 to 1850 in the 19th century Bengal could be regarded as the years of some rich wealthy Bengali merchants. In that time most of the contemporary Bengali magazines or *patrika* had raised their voice in support of investing their capital overseas and in local trading enterprise.[127] The growth of trade in Indian Ocean touched the metropolitan minds of Calcutta as in 1839 'Mechanics Institutes' was established for facilitated trade and commercial activities.[128] One of the greatest examples among Bengali's endeavour towards maritime trading and overseas business investment was the enterprise of *Ramdoolal Dey Sarkar*, a Bengali merchant who acquired a great fame among the maritime merchants even from China to America. His main success was to establish trading relation between the Bengal and America. He was so famous in overseas market that the American traders and merchants had built a merchant ship named '*Ramdoolal Dey'*. Ramdoolal was carried his overseas business by the help of 3 ships in his ownership. They were *Vimala*, *David Clark*, and *Ramdoolal Dey*.[129]

Table no. 2.4, The Maritime Trade Network of Ramdoolal Dey

Place in USA	Companies who worked with Ramdoolal Dey by Maritime Trade
Boston	G.R.Minot, J.Young, J.S.Amory, etc...
New York	Messrs.Lennov & son, G.Brown, T.C.Bacon, M.Curtisn etc...
Philadelphia	Messrs. Grant & Stone
Saalen	Pickering Dodge, W.Landor
New Barry Port	The Hon'ble E.S.Rant, J.H.Telcombe
Marvel head	J.Hooper

Source: Binoy Ghosh: *Banglar Samajik Itihaser Dhara,1800-1900*, (Kolkata, Prakash Bhawan,2009), p.115.

[126] *Ibid*., p.207.
[127] Binoy Ghosh: *Banglar Samajik Itihaser Dhara*,1800-1900, (Kolkata, Prakash Bhawan, 2009),p.98.
[128] *Ibid*., p.99.
[129] *Ibid*., pp.115,116.

Another example is the establishment of 'Car Tagore and Company' in 1836 owned by Prince Darakanath Tagore.[130] In the same years he formed the 'Calcutta Docking Company' in a joint partnership with William Prinsep.[131] It was famous for the export trade of Indian coal to Europe though after some decades it was fall by many reasons. This kind of growing export business explicitly proved the maritime development of Calcutta port as their all large vessels and ships sailed through the Calcutta port. The effects of the act of 1813 which opened trade between Indian port and the Britain/Europe was the booming of maritime trade networks of Calcutta's Agency houses and expanding shipping by Calcutta port. Prior to this period, the EIC had (though unofficially) rights of 'port monopoly' in Calcutta, because they didn't use to allow the individual merchants to ship more than 50ton merchandise in company's ships from Calcutta port. Moreover this facility of shipment up to 50 tons from Calcutta port was allowed only to the company's own officers and defence commander because of their low income. In other words in that age private or individual enterprise in shipping was barred both for all the native and European merchants.[132]

The growing demand for maritime overseas shipping and pressure by the Agency houses at last succeed to affect the British governmental policy towards Indian Ocean trade and shipping. Their pressure then obliged the Court of Director to appeal the governor general for granting up to 3000 ton of merchandise for export shipping.[133] If we take the details of some European Agency house's export index then this picture will clearly narrates the argument. 'John Palmer & Co'. was the one of the most powerful and big Agency house in Calcutta. This Agency house was enabled to expand his business network by the expansion of firm's own trading fleet after 1813. In 1811 he has only 1 merchant fleet named- *Venus*. But in 1815, it reached to 15 ships and further 23 in 1821.[134] By 1828 iron steam vessels was used in Ganga.[135] In the same time the administration also took some important steps towards Indian Ocean

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[130] *Ibid*., 106.

[131] Kolkata Port Trust Archives(Henceforth as KPTA), from an official published Pamphlet , "Maritime Heritage of Bengal & Port of Kolkata",2009,p.15.

[132] Abhishek Bhattacharya: *Bharater Ouponibeshik Orthonitite Agency House*,(Kolkata, Renaissance Publishers private Limited,2015),p.11.

[133] *Ibid*., p.21.

[134] Anthony Webster: *The Richest East India Merchant, The Life and Business of John Palmer of Calcutta*,(New Delhi, Viva Books Private Limited,2009),p.32.

[135] M.N.Pearson: *Op.cit*., p.202.

shipping. From now the private ships always bound to take European staffs in cabin for duty in proportion of 2/3 of total employees. Also it was ordered by the court that those ships could not be used to serve the foreign states. Some special norms were sometimes applied to the Indian Ocean private ships in war times. [136]

Table no. 2.5, Growing ships of John Palmer & Co. in Calcutta

Year	Trading Ships / Vessels
1811	1 ship
1815	15 ships
1819	19 „
1821	23 „
1822	22 vessels

Source: Tabulated from, Anthony Webster: *The Richest East India Merchant: The Life and Business of John Palmer of Calcutta*, (New Delhi, Viva Books Private Limited,2009), pp.32,56.

This growing maritime trade in Indian Ocean also had an impact upon internal economy of Bengal. As the risks was always involved in long distance trade especially in overseas voyages so many maritime insurance company had palm off in Calcutta. Like the 'Calcutta insurance company' owned by the john palmer which was specialised for the insurance of Calcutta-China trade. There had an agent in china who worked for them named- Dent & Co.[137] Shipping also created trading partnership bond in Calcutta's culture . It was the rule in private Indian Ocean shipping in that time that ships/vessels should be owned by a joint partnership between the investor like John Palmer and the men who captained the vessels. Though it reduced the cost of running a ship but also created needs for recruit a vigilance officer or employee due to their trans-global trading venture.[138]

Hence, it would be a valid argument from considering the above facts and statistics that India was becoming a crucial position in the Britain' oceanic empire and also in her domestic Economy. In fact India moreover was becoming the 'clearing house' of a triangle trade: Britain –India –America. It was achieving a crucial position in Britain's

[136] Abhishek Bhattacharya: *Op.cit.*, p.22.
[137] Anthony Webster: *Op.cit.*, p.32.
[138] *Ibid.*,p.56.

international payment systems.[139] We will discuss soon how it was achieved fully in the last half of the 19th century especially in the decades between 1880s and 1900s. However partnerships of native merchants with the EIC and later with Agency House do not reflect the participation of native seaman or native maritime merchant in the Indian Ocean. They were extracted from the deep oceanic trade.

Although this view has recently challenged by a group of scholars like Chhaya Goswami, in her recently published book. She has given a number of evidence that the indigenous Indian Ocean merchants like Gujarati merchants from Kachchh has successfully operated maritime trade in Indian ocean even after it became a 'British lake'.[140] Another example is, after 1870 a new steamer company started to trade from Calcutta port named- Eastern Bengal Steam Navigation Company owned by *Roys of Bhagyakul* which derives a native enterprise. [141] Sarah Searight claimed that by 1900 the Persian Gulf was over crowded with the British and Indian shipping. In the Persian Gulf as she wrote, Hindustani was the prevailing language.[142] It could be assumed that this was possible due to the presence of Indian seaman in gulf in terms of trade. According to Pearson, the local still had the role in maritime trade till 1850 but confined only with intra-oceanic trade.[143]

C. Globalisation in Shipping

The period from 1850s in Indian trade history can be regarded, as remarked by many other renowned economists and historians, the beginning of modern trade and commerce, and someone has regarded it as a 'commercial revolution'![144][145] A reputed

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[139] K. N. Chaudhuri: 'India's Foreign Trade and the Cessation of the East India Company's Trading Activities,1828-40', *The Economic History Review* , *Vol. 19, No. 2 ,1966*, p.345.

[140] Chhaya Goswami: *Globalization Before its Time, The Gujarati Merchants from Kachchh*, (Harwana, Penguin Books India Pvt Ltd, 2016), pp.130-185.

[141] Prajnananda Banerjee*: Calcutta and its Hinterland, A Study in Economic History of India, 1833-1900,* (Calcutta , Progressive Publishers,1975) ,p.36.

[142] Sarah Searight: *Steaming East, The Forging of Steamship and Rail Links Between Europe and Asia*, (London, The Boydel Head, 1991),p.227.

[143] Michael Pearson: *Op.cit.*, p.194.

[144] Bipan Chnadra: *The Rise and Growth of Economic Nationalism in India*, *Economic Policies of Indian National Leadership,1880-1905*,(New Delhi, Har-Anand Publications Pvt Ltd,2010), p.134.

[145] 'Commercial Revolution': is a term first academically used in European Economic History by historian Robert. S. Lopez for describing the sudden dramatically improvement of commercial and business instruments like banking, monetary reforms, growth of partnerships especially in maritime trade, growth of insurance and booming of trade both in internal and external. See, Robert. S. Lopez: *Commercial Revolution of the Middle Ages*, 950-1350, (Cambridge, Cambridge University Press , 2008).

critique of Indian famine has point this period as a 'revolution in communication and transport' also.[146] In 1850s the carrying capacity of world's merchant fleet was 9 million tons. In 1910 it had reached up to 34.5 million. The volume of International trade grew 25 times between 1850 and 1914.[147] One of the causes for this development was the growth of per-capita income in Europe and USA which created an increase of demands for import items. As a result ships movement around the world increased yearly by 4.7% from 1870s to 1880s.[148] In that time the project of technology transfer from Europe/UK to India facilitated the growth of ships development in Indian Ocean region both in size and modernity.[149] In Indian history according to Chaudhuri, it was the age where a continuous series of statistics, trade data is available and a unified currency system for the whole of India was established successfully. So both of the improvements made it possible to calculate the rate of import and export trade for the whole country. The average annual rate of growth in overseas trade of India was 3.23% for exports and 3.68% for imports. In spite of noticeable variations between the individual decades from 1850 to 1914, this period also had a certain homogeneity which was lost after the First World War. The reasons among which are given important most was the growth of many multilateral trade agreement with the Britain , heavy capital exports, industrialization of European world, us and Japan, sudden fall of global sea transport cost, railway expansion in India and development of shipping technology by the use of iron, steel and later Diesel ships.[150] The period 1850-1914 was also the great age of European foreign investment.[151] In this period Britain enjoyed a political peace, London became the centre of financial empire, much highly specialised institution appeared like commercial bank, issue house, private banks, brokers which all facilitated foreign trade. By 1915 British foreign investment was equal or even exceeded the combined of all European investment.[152] All of these components together caused to

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[146] B. M. Bhatia: *Famines in India, A Study in Some Aspects of the Economic History of India with Special Reference to Food Problem 1860-1990*,(Delhi, Konark Publishers Pvt Ltd, 1991),p.27.

[147] Michael Pearson: *Op.cit*., p.193.

[148] Robert Lee: 'Port : Characteristics of cities', in John B. Hattendorf (ed): *Oxford Encyclopedia of Maritime History*, *Vol.3*, (New York, Oxford University Press, 2007), p.332.

[149] Kristine Bruland and David C.Mowery: 'Tecnology and the spread of capitalism', in Larry Neal & Jefferey G. Williamson(eds): *The Cambridge History of Capitalism*: *Volume II*,*The spread of capitalism From 1848 to the present*, (Cornwall, Cambridge University Press,2015),pp.110-11.

[150] K.N.Chaudhuri: 'Foreign Trade and Balance of Payment', *Op.cit*., p.832.

[151] William Woodruff: *Impact of Western Man: A Study of Europe's Role in the World Economy 1750*-1960, (London, Macmillan and Company Limited,1966), p.116.

[152] *Ibid*.,p.117.

sudden rise of the world trade with a great volume of cargoes. K.N.Chaudhuri, remarks the impact of this trade as 'a process from which even countries with very old-established economies like India benefited.'[153]

The years from 1850s-1860s should be marked as an era of highest growth for both in imports and exports. Perhaps the outbreak of Crimean war and the beginning of railway construction in the subcontinent which facilitated the export of large capital from Britain to India was the major stimuli. As a result the stoppage of trade with Russia which was a chief suppler of oilseeds, flax and hemp gave a way to raise the overseas trade from India. India became the alternative supplier instead of Russia. Similarly the railway construction in India boosts the export of British capital to India. For instance, the total of imports of merchandise which stood at Rs. 115.6 million in 1850-51 dramatically increased by 200% in 1860-61, while in the same period the rate of growth in Indian exports was 181%.[154] Those special factors that had ultimately led to the unprecedented growth of India's overseas trade strongly continued in the next decades. In the later periods American civil war was another important ingredient for growth of India's overseas trade. But perhaps most revolutionary impact was of the opening of Suez Canal in 1869.[155] Between years from 1870 and 1900, according to Chaudhuri, there were some disturbing factors that caused to slow the rate of growth in overseas trade. The last decade was particularly bad for overseas trade as growth of imports was only 1.23% and no such growth was seen in Indian export. Perhaps the Madras famine of 1876-77 caused to the fall of growth rate in foreign trade. Simultaneously the sudden fall of gold-silver price which caused the decline of exchange value of rupee till 1893 was another factor for the loss of Indian Ocean trade.[156]

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[153] K.N. Chaudhuri: 'Foreign Trade and Balance of Payment', *Op.cit.*,p.832.

[154] *Ibid.*,p.834.

[155] It should be mentioned here that some scholars believed the opening of Suez did not increased the enormous volume of India's sea-borne trade as it already had before the previous decades. Although they agreed with the view of positive impact of Suez upon overall Indian economic growth after 1870. See for details, Max.E.Fletcher: 'The Suez Canal and World Shipping,1869-1914,'*Journal of Economic History*, *XVIII, December, 1958*, pp.556-73; and John Adams: 'The Impact of the Suez Canal on India's Trade', *Indian Economic and Social History Review*, *November 1869*, pp.229-240.

[156] K.N. Chaudhuri: 'Foreign Trade and Balance of Payment', *Op.cit.*, p.835.

But Chaudhuri's view for the loss of overseas trade in the decades after 1870 is not out of question. General history of the Chittagong port and its overseas trade during these periods boldly opposed this view. Both the number of steamers of British India Steam Navigation Company entered in and cleared from this ports undoubtedly growing. Further, increased of export-import values and customs dues at this port were the indicator of booming oceanic trading. In the year 1877-78, total no of ships entered at and cleared from this port were 49. Later it became 61 within the next 2 years and interestingly in 1881-82 it reached to 92.[157]

Table no. 2.6, Rising Overseas Trade of Chittagong Port

Years	Export-Import value(Rs.)	Customs(Rs.)	Port Receipt(Rs.)
1880-81	143 Lakhs	7¾ Lakhs	34,425
1881-82	-	12 "	58,575

Source: West Bengal State Archives (Henceforth WBSA), 'Chittagong', Marine Department Proceedings, February 1883, File no.58, p.18-19

Economic historian Tirthankar Roy explains in detail the causes and effects of this expanding oceanic trade upon Indian and Indian Ocean economy. According to him, railways linked the land with the ports and arrival of steamships connected coastal trade with the international trade.[158] The growing export trade of Indian grains in the second half the 19th century was the direct effect of the Anglo-Burmese war which linked China with the Calcutta port through a new axis of overland trade routes in the north-eastern frontier after when the British succeed to conquer the whole of Burma.[159] For instance, Burmese wheat played an important part in international grain trade. Till 1913 the share of Indian food grains was more than 20% of her total export value, and in 1891-92 their share was almost 26.5% respectively. But the most important notable fact is that in these former years Burmese wheat almost captured half of the total share of food grains even equal to the proportion of rice exported from India.[160]

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[157] West Bengal State Archives (Henceforth as WBSA), 'Chittagong Harbour Improvement', Marine Department Proceeding, February 1883, File no.58, p.14-17.

[158] Tirthankar Roy: *India in the World Economy: From Antiquity to Present* ,(New York , Cambridge University Press , 2012), p.158.

[159] *Ibid.*

[160] K.N. Chaudhuri: 'Foreign Trade and Balance of Payment', *Op.cit.*, p.850.

The opening of Suez Canal gave further impetus to the wheat exports because it reduced the shipping times. The voyage to Bombay from the England prior to the opening of Suez was more than 100 days and after the opening of Suez it was reduced to 21 days only.[161] In the same time the Panama and Cape route were more attractive (even a dangerous competitors of Suez!) to the vessels of Australian and Japanese ports because it was a free-toll zone. But one of the lucrative advantages of Suez was that it passes through a number of important sea ports at which the ships can add to its income by taking up additional passengers or shipment of cargoes.[162] For the growing interest of shipping in Suez a growth rate was occurred in English shipping industry and as a result the shipping cost also dramatically reduced. In the twelve years from its opening the cost from the port of London to port of Calcutta falls from 55 shillings to 27 shillings per ton which fostered undoubtedly the sea trade.[163] Thus Suez became as the 'lifeline' of Britain. Indeed it was true for another reason, as William Keylor describe that Great Britain because of being transformed from an agricultural country to industrial nation she could not produced more than 30% of foods consumed by her own population and thus began to entirely depended upon her colony, mainly on India. So Suez was a watershed for Indian overseas trade.[164]

Table no. 2.7, Shipping Length after Opening of Suez (in nautical miles

From	To	Via cape	Via Suez	Distance saving (%)
London	Bombay	10,667	6,274	41
London	Calcutta	11,900	8,083	32
London	Singapore	11,740	8,362	29
London	Hong Kong	13,180	9,799	26
London	Sidney	12,690	12,145	4

Source : William Woodruff: *Impact of Western Man: A Study of Europe's Role in the World Economy*,1750-1960,(London, Macmillan and Company Limited,1966), p.26.

[161] Imperial Gazetteer of India, *Vol.III, 1907*, p.262.
[162] Joseph De Somogyi: *A short History of Oriental Trade*,(Hildesheim, Georg Olms Verlag,1998),p.235.
[163] B.M. Bhatia: *Op.cit.*, p.28.
[164] William R.Keylor: *The Twentieth-Century World and Beyond : An International History Since 1900*, (New York, Oxford University Press,2011), p.3.

Table no. 2.8, Growth of Shipping through Suez (in millions of net tonnage)

Year	Trade volumes
1870	0.4
1880	3.1
1890	6.9
1900	9.7
1910	16.3
1914	19.4

Source: William Woodruff, *Impact of Western Man: A Study of Europe's Role in the World Economy*,1750-1960,(London, Macmillan and Company Limited,1966),p.26.

To some extent the government policy also acted as a stimulus for growth of trade. In 1873, they repealed the export duties upon wheat exports. From 1902 to 1913, Britain was taking nearly 18% of Indian total wheat exports to overseas countries.[165] One of the consequences of the sudden boom of world grain trade in the proceeding period was the increase of demand of container bags which in turn was responsible for the growth of cultivation in raw jute for export. The establishment of jute mills around Calcutta was the direct results of that demand. At that same time the reduction of freights between Calcutta and Burma has also stimulated the jute trade of Calcutta.[166]

This period of growth we are discussing now also saw the experience of changing in variation of trading commodities. Just like opium which was the main commodities for export to china was replaced by cotton in the decades of 1860s due to the start of American civil war. (For example till 1850, the U.S.A. supplied 75% of total cotton imports in the port of Liverpool and dramatically it fall from that time, that indicates the results of her civil war on export of cotton trade)[167]. Another reason was due to a sudden shortfall in the production of China because of surging her population in the same decades.[168] Later the demand for Indian cotton was so increased that even the

[165] *Imperial Gazetteer* of India, *Op.cit.*, p.262.
[166] *Ibid.*,p.74.
[167] J.A.Harris(ed*): Liverpool and Merseyside, Essays in the economic and social history of the port and its hinterland, (*London, Frank Cass & Co.Ltd, 1969), p. 184.
[168] C. A. Bayly: *The Birth of the Modern World 1780-1914, Global Connections and Comparisons*, (New Delhi, Blackwell Publishing, 2004), p.130.

D.M of every districts had encouraged their peasants for cotton plantation. These decades saw an unprecedented order of Indian cotton from Britain. This circumstance spread a rumour that Lancashire will pay good money for any quality product which at last give birth an adulteration in it. As a result Bombay cotton frauds Act passed in 1863 and made the adulteration under a criminal offence punishable by imprisonment![169]

However this boom came to an end when American civil war ended and she again started to export cotton.[170] The shifting trade of grain commodities and the boom of its world export had an effect upon Indian economy especially in the time of wheat trade in 1880s-1900s when it increased the canalization/canal irrigation in Punjab. The years from 1881 to 1911 major improvements of canal irrigation took place in Punjab. In that period a total of 11-22 million acres land came under cultivation.[171] With the growing overseas trade a new area was developed, that is the conversion of waned Agency Houses into (as Prof. Roy marked it) the 'Managing Agencies' for survive. Roy asserts that they became an 'actor of world economy' rather than a 'part of world economy'. Like 'Mackinnon, Mackenzie' a reputed firm of global business which started his career as a steam navigation company from Calcutta port to Rangoon in 1857. Later it became the largest shipping company in Asia - the 'British India Steam Navigation Company'.[172] After a decade it received the contract from government for mail service and thus expanded his business network to the Persian Gulf and East Africa. It invested his capital in jute manufacturing and tea industry in Calcutta between 1860 and 1900.[173] *Rally Brothers* was in dealing a great quantity of jutes and rice for overseas exports from the port of Chittagong. They also had strong business in tea and cotton.[174] Another firm was 'Gillanders, Arbuthnot' started in 1833 based in Calcutta which had an extensive interest in shipping from Calcutta port to South-East Asian ports.[175]

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[169] Tirthankar Roy: *Op.cit*, pp.166-67.
[170] *Ibid.*
[171] *Ibid.*, p.168.
[172] *Ibid.*,p.170.
[173] *Ibid.*, p.171, for a better discussion of this subject see, J. Forbes.Munro: *Maritime Enterprise and Empire: Sir William Mackinnon and His Business Network*,1823-1893, (Woodbridge, Boydell Press,2003).
[174] WBSA, 'Chittagong', Marine Department Proceedings, February 1883, File no.58, p.18-19.
[175] Irfan Habib: op.cit, p.171.

Another important effect of the growth of Indian Ocean trade these following periods was development of global banking. Some notable banks emerged within these periods were as 'Bank of Western India', established in Bombay in 1841 which was the chief bank for remittance foreign exchange. The bank has succeed soon in establish her sister branches in Colombo, Calcutta, Hong Kong and Singapore. Later it renamed as 'Oriental Bank' after acquired a royal charter from government. Another one was 'Mercantile Bank of Bombay' established in 1853. Actually from 1853 onwards when Japan opened herself for free trade to the west, it gave such impetus to the of rise of international banking in India and most of the British owned ports in the Indian ocean.[176] Most of the banks worked for international remittance were almost located in the ports and port cities and thus they also made a role in integration of Indian Ocean world or her littoral societies.

The Port of Calcutta was very much closed with the contours of Indian Ocean trade as well as India's overseas trade. We have discussed earlier that the period before 1870 was the period of plans and project in port trust history. Many plans were made but nothing was done successfully. In the previous decades the government began to investigate the capabilities of the Hooghly River for large vessels shipping. They had a view that the river Hooghly was deteriorating and felt the needs of incentives for its remedy. The ships as they mentioned in a meeting became longer and deeper than before.[177] We will note later about the steps they had taken for the recovery of the Hooghly River like opening up a regular pilot service. So English's concern towards trade from and to Calcutta was dated back from many years ago. But it was the sudden increase of world trade that gave birth to the modern Calcutta port.

The increase in the tonnage of vessels during the next decades since the birth of port trust was at rate of 10% per year. The commissioners of Calcutta port then introduced some kind of necessary steps to maintain the port's ability for growing export trade through this port. One of these improvements was the construction of new docks in Calcutta port. Before it, 'Bengal Chamber of Commerce' felt the same necessity of constructing docks for increase the number of ships visiting this port. In a letter dated 29th December, 1858 the chamber stated: "The time has now arrived when

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[176] *Ibid.*, pp.172-73.

[177] 'Reports of the committee appointed by the Government to enquire into the state of the River Hooghly', *The Calcutta Review*, Vol. XXV, July- December,1855, p.249.

nothing less than the absolute possession of wet dock accommodation will satisfy the increasing requirements of the extending commerce of Bengal."[178]

But real improvement of the Calcutta port was from its foundation in 1870 when the port commissioners introduced a new norm for the jetties. From this time the jetty was bound to keep the below receipts:[179]

1. Register of Vessels Discharged
2. Registered of goods Delivered
3. Receipt Books
4. Tally book.
5. Import warehouse Register
6. Register of Despatches to Import Warehouse

This list clearly suggests that sufficient care for keep the overseas import trade records had been introduced by the trust. It also reflects the extreme modernization of the Calcutta port. Later this trend in developments got a peak in the years from 1870 to 1877. The accommodation for the ships in the jetties rose in those years from 51 to 192 and total no of ships calling at the port increased from 931 to 1171.[180]

Table no. 2.9, Ships Arriving at Calcutta Port (1870-1877)

Year	Steamships	Sailing ships	Total	Gross tonnage
1870-71	259	672	931	994,391
1876-77	562	609	1,171	1,696,701

Source: Sunil kumar Munsi, *Dynamics of Urban Growth in Eastern India*, (Kolkata, Thema publishers,2011),p.108

Again after a couple of years the committee of the Chamber further appealed to the government for the construction of wet docks at Calcutta. After the establishment of Port Trust, W.Duff Bruce the Vice-Chairman of the port submitted a scheme in

[178] Nilmani Mukherjee: *The Port of Calcutta: A Short History*, (Calcutta, The Commissioners for the Port of Calcutta, 1968), p.70.

[179] KPTA, Memorandum from J.A.Crawford, collector of Customs, to the Commissioners of Port Trust, Proceedings of the Meeting of the Commissioners for Making Improvements in the Port of Calcutta,Vol.1,October 1870-March 1871,Memorandum no.3.

[180] Sunil Kumar Munsi: *Dynamics of Urban Growth in Eastern India*, (Kolkata, Thema publishers,2011),p.108.

1876 with a view to provide suitable port facilities to meet the demands of external trade. The estimate cost of the scheme was Rs. 237 lakhs. Later the question regarding the improvement of port facilities was once again revived in 1881. We have noted in the early sections that these decades was the time of booming export trade of Burmese rise and jute bags to the west. This continuing urge for the improvements of port facilities by the port administrators in this decade was so integrated with the growing of export trade from Bengal. In 1882-83 a committee was appointed for investigating the case and they submitted with a view that wet docks and deep water docks should be constructed soon. (The committee had selected Diamond Harbour as the suitable place for it).[181] The sudden growth of export trade from the port of Calcutta further made considerable attention to the port officers for take care of the regular pilot service in the Hooghly River. On a letter to the secretary, government of Bengal, the Superintendent of marine of the port informed that he did not consider if any difficulty would arose from the management of the pilot service in the river. He further appealed to the government that considerable steps should be taken for the improvements of the vessels and lighthouse like the development of the same in the port of Bombay. In his opinion it would be best if the management of Calcutta port could undertake the responsibility of whole the river for supervised.[182] Later the commissioners for the port of Calcutta had accepted the decision that accommodation for the trade of the port required both for meet the demand of export and import trade. They finalised their decision with an opinion that Kidderpore would be the best site for construction wet docks. Thereafter Government of India had approved their proposal and the former committee further wrote to the Secretary of states about the immediate needs for construction wet docks at Calcutta for the expanding trade of Bengal. Lord Kimberley stated for the improvements of Indian ports for overseas shipping which was closed very much to India's commerce as well as world economy.[183] After 1870s one of the noticeable fact in Calcutta port in the Hooghly river was replacing the vessels by the steamers.

[181] Nilmani Mukherjee: *Op.cit*, p.72.
[182] WBSA, Letter from W.H.Searle, superintendent of Marine to Secretary, Govt of Bengal, Proceeding of Marine Department (Gen-MSS), January, 1879, File no.5.
[183] Nilmani Mukherjee: *Op.cit.*, p.73.

Table no. 2.10, Trade of Kidderpore Dock after it's Opening

Years	Imports (tons)	Exports(tons)
1896-97	89,111	585,000
1897-98	84,061	1,140,464

Source: Nilmani Mukherjee, *The Port of Calcutta: A Short History*, (Calcutta, The Commissioners for the Port of Calcutta, 1968), p.80.

Statistics shows that Kidderpore docks main role was in the export trade from Bengal. It was probable due to the rise of jute, tea and rice trade during these years and especially for coal exports which was handled entirely by Bird & Co.(it was previously engaged as labour contractures).[184] The first vessel entered the Kidderpore dock on 28th October, 1892 and it was then ready to receive ships by 1893 onwards.[185] In the export trade following the years 1897-98, a total of 230,838 tons were jute; 44,327tons tea and 672,767tons were coal.[186] The Immediate effect of the establishment of Kidderpore docks and its export trade upon the internal transport of Bengal can be understood with the fact of sudden reopened of 'India General Steam Navigation Company' in 1896 which was ran between Calcutta and the north western districts of Bengal province. It was closed in 1888 but again started its work for supply the grains and exports items from districts of north-western Bengal to Calcutta.[187] Again the statistics can prove my assertion as in total export value in 1896-97 from Calcutta was Rs. 2,31,39,417, had increased to Rs.2,63,27,721 in the next year.[188] There is an interesting story behind the name - Kidderpore Dock. It was said and still believes that the British could not converse in Bengali. So whenever they passed by, they asked for the directions to the port where their ships used to harbour, in broken Hindi, something like Kidder-port? (Where is the port?). Thus the name Kidderpore came

[184] [184] KPTA, from an official published Pamphlet, 'Maritime Heritage of Bengal & Port of Kolkata',2009, p.27.

[185] Sunil Kumar Munshi: ,*Op.cit*,p.108.

[186] Nilmani Mukherjee: *Op.cit*,p.89.

[187] Reports on the River-Borne Traffic of the Lower Provinces of Bengal and on the Island Trade of Calcutta and on the Trade of Chittagong Port', 1898-99,Chapter 1,point.3.

[188] Reports on the River-Borne Traffic of the Lower Provinces of Bengal and on the Island Trade of Calcutta and on the Trade of Chittagong Port', 1898-99 chapter3, point.1.

into existence![189] The rising demand for the improvements of port facilities from the mercantile communities and traders of Calcutta was I think the real ingredient for birth of Kidderpore Docks. Especially for export of jute trade from Calcutta which almost doubled between the years 1875 and 1913, and partly because jute trade in Bengal was being continued to lose her local market, a fall from 60% in 1885 to 10% in 1900s. So the Calcutta mills required more overseas exports for sustain their industries. In this time the door for Calcutta's jute merchants to world market was opened by a group of Dundee businessman, one of them was Thomas Duff founded a factory in 1874 at Hooghly.[190] Jute was previously used as a cheap substitute for flax and other textile material in Dundee from1830s.[191] This demand was peak high degrees in the year 1878 when a letter was send and assigned by the major mercantile communities of Calcutta on 15th August to the secretary of Calcutta port. Among them Messrs. Gillaowders, Arbuthnot & co, was important.[192] They had their opinion that for their growing trade and for landing large number of vessels improvements in port should be done soon. Some copy of their latter is therefore mentioned below:

> As agent for ships, having business relation with shipping, which necessitates our going or sending on board vessels, we are in the way of hearing complaints of the want of facilities for embarking on and landing from boats. Considering the tonnage numbers of vessels which lie alongside this frontage.....we trust, you will agree with us in your opinion that improvement of the means of landing is one which deserves the immediate attention of the commissioner.[193]

As a result the authorities of the Calcutta port began to develop her infrastructures. Among them one notable step was established a new warehouse in Calcutta. A new warehouse was established for tea in Armenian Ghat in the year 1887.[194] Not only in Calcutta but also this demand for improving port facilities arose in most of the Indian ports that were engaged in overseas trade. The government had paid a serious attention

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[189]KPTA, from an official Published Pamphlet , "Maritime Heritage of Bengal & Port of Kolkata", 2009, p.24.

[190] B.R. Tomlinson: *The Economy of Modern India, 1860-1970*, Reprint edition, (New Delhi, Cambridge University Press, 2005), p.120.

[191] *Ibid.*, p.119.

[192] WBSA, Letter to the Secretary of Port, Calcutta, Proceedings of Marine, General Department, January 1879, File no.7, p.1-2.

[193] West Bengal State Archives, Proceedings of Marine, General Department, January 1879, File No.7, P.1-2

[194] Kaustubh Mani Sengupta: 'Warehouse and Transport Facilities in the Port of Calcutta, 1870-1950', p.2, collected online from, www.mcrg.ac.in/Logistics/Kaustube (Last accessed on 26/04/2017, at 12.34 A.M.).

to this matter. For instance, in the port of Chittagong the government ordered for the iron jetty in 1878 and it was almost completed in 1880 for use. So it would be sufficient enough for supporting the assumption that the government also paid considerable attention for the improvements of the port of Chittagong just like Calcutta port to handle the export demand.[195]

Similar sign of improvements was a new setting of Light House at the Bombay Port.[196] The effectiveness or the results of these the development of its infrastructures at Chittagong port is clearly noted in the statistics of clearing of merchant ships with the equal numbers of ships entering this port. For example, in 1880-81, total of 91 steamers entered and all were cleared within this year. In the next proceeding years, 92 entered and the port was able to successfully clear all steamers this year.[197]

This connection between India's overseas trade and Calcutta port's infrastructural development continued till the first 2 decades of the 20th century. The political reforms, stability of government, participation of native representatives by the Morley-Minto reform in legislative councils and growing multilateral world trade were the reasons behind that continuation. Another important point is the stabilization of Indian rupee by the close of Indian mints in 1893. By this time Indian government began to pay more attention to the problems of industry and trade. For instance in 1904 Lord Curzon established a separate branch -'Department of Commerce and Industry.' Efficiency of Indian commercial organizations in playing India's trade and commercial matters had arisen during this period. Many new organizations were developed like 'Calcutta Import Trade Association' which played a major role in Calcutta's overseas trade. The chamber of commerce also had an impact upon India's trade. It had already established in all the major ports of India – Calcutta, Bombay, Karachi, Madras, Rangoon, Cochin, and Cocanada. This bodies now began to superintend the measurement and weighing of goods and undertake the responsibilities for omit the disputes between various commercial groups and the port.[198]

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[195] WBSA, From E.E.Lowis, Commissioner of Chittagong to Secretary, Govt of Bengal, Proceedings of the Lieutenant govt of Bengal, Marine Department,(General),January,1880, File no. 1,p(1-2).

[196] WBSA, From E.E.Lowis, Commissioner of Chittagong to Secretary, Govt of Bengal, Proceedings of the Lieutenant govt of Bengal, Marine Department,(General),January,1880, File no File no. 5.

[197] WBSA, 'Chittagong Harbour Improvement', Marine Department Proceedings, February 1883, File no.58, p.14-17.

[198] *Imperial Gazetteer of India*, vol.III, 1907, pp.267-68.

The general expansion of commerce after 1900 as Prof. Nilmani Mukherjee think had greatly influenced the rapid growth in both the value and volume of ports' trade. This growing trade of the port not only proved the prosperity of that area or hinterland of Calcutta port but also the people who served by it. One of the basic equations of international economics is that if the exports qualify the amount of imports than the balance of trade is in favour of this country.

Port's import-export statistics will be again helpful for us to validate this argument as because port is the outpost of international trade. In colonial times much of the bulk trade was handled by the ships or vessels because of its cheap carrying cost. So the export-import data of any ports can help us to this following issue.The following mentioned figures are the value of private merchandise in Lakhs of rupees which proved the former assertion:

Table no. 2.11 , Trade of private merchandise through Calcutta Port (1893-1913)

Years	Import (foreign) Lakhs Rs.	Import(coasting) Lakhs Rs.	Export(foreign) Lakhs Rs.	Export(coasting) Lakhs Rs.
1893/94 -1897/98	+28,02	+5,01	+44,04	+5,83
1898/99-1902/03	+30,93	+4,47	+50,89	+6,78
1903/04-1907/08	+41,62	+7,48	+66,88	+7,58
1908/09-1912/13	+50,55	+9,30	+78,89	+9,34
Total	=15,112	=2626	=24070	=2953

Source: Data re-arranged from, Report of the Port Enquiry Committee, 1914,vol.1, cited in Nilmani Mukherjee: *The Port of Calcutta: A Short History*, (Calcutta, The Commissioners for the Port of Calcutta, 1968), p.85.

The above table shows that external trade of the Calcutta port in both overseas and regional was in a steadily growth from year to year. There was not any year of fluctuations for export-import trade. But it also clear that export trade was the main trade of this port as balance of payment was again in favour of India after a long time.

Balance of payment in favour of India by export trade was a millennia old Indian tradition. India always exported more than imports since her classical times. The EIC broke this millennia old Indian tradition after achieving power over Indian economy and polity. The importance of the Calcutta port among all the other ports of India regarding foreign trade got peak in the year 1900-1907, when imperial gazetteer of India put Calcutta port it in the first position among the other Indian ports in order of their importance. [199]

The commodity composition of the trade of Calcutta port was many as almost all types of goods were traded through this port. But if we would like to talk about the direction of commodities then we should confined it within 3 major export and import goods. These were Jute in both raw and manufactured, wheat, Indian coal for export and iron-steel, Sugar and railway plant for imports. Jute was the main commodities for export. The increase of raw and manufactured jutes in Bengal and the dramatically growth of the jute mills in and around Calcutta were the reasons for enormous exports of jute to foreign ports. It increased to tenfold within the 30years and ended in1912-13 respectively. But in the case of wheat it fluctuated from year to year. Kidderpore docks were mainly constructed for the export of wheat. The main supplier of wheat to Calcutta port was Bihar and united province. At the close of the 19th century in the year 1898-99, a total of 15,147 mounds wheat supplied from Bihar to Calcutta. [200] Although considerable amount of imports supplied from others districts of Bengal like Burdwan, Midnapore and Murshidabad. Murshidabad was the chief district of Bengal for export of wheat to Calcutta. It exported 6,180 mound wheat in 1897-98 and 10,433 in the next proceeding years. [201] Other item from Bihar was Linseed where Patna was the chief exporter to Calcutta. In the year 1898-99 Patna had exported 3,07,979 mounds Linseed to Calcutta increased 3 folds from the previous year of her export quantity. [202] But there was a tendency in the years after 1880s the diversion of wheat exports from Calcutta port to Karachi port as the shipping cost from Karachi to European ports was cheaper than the former. In 1906 Messrs. Finlay Muir & Con. informed the Bengal Chamber of Commerce that ships were leaving from Calcutta port to the port to Karachi to

[199] *Ibid.*,p.272.
[200] Reports on the River-Borne Traffic of the Lower Provinces of Bengal, op.cit.,Chapter-2, point.7.
[201] *Ibid.*, chapter 3, point.5.
[202] *Ibid.*, point.6.

obtain cargoes there. This problem could not solved by employing any measures in Calcutta port. The committee of 'Calcutta Wheat and Seed Association' once asserted that if the East Indian railway willing to carry goods from these wheat supplier stations with free of cost, it would never be possible to divert this trade from Karachi to Calcutta port. Another important items of export was coal which had a steadily growth in those years. The shipment of coal from this port was so large in both the value and volumes that once in 1888 Messrs Mackinnon , Mackenzin & Co. gave their strong opinion to the port commissioners for the development of port loading facilities regarding large exports in coal.[203] One of the reasons behind the booming coal export from Calcutta was the high price of British coal in the west. Besides development of communication by rail which connecting most of the coal industries to the Calcutta was another stimuli. For instance the trade of coal export grew impressively in the period after the establishment of Bengal coal industry. Shipment of coal from the Calcutta port was frequent mostly to the ports of Australia, Ceylon and Sumatra. This development of coal export through this port was in decline in the later decade due to the 2 major facts: one was the increase of Japanese coal export trade which slowly captured the Indian coal market in Asia-pacific and another was growing of Indian internal demand for coal which barred the coal export to overseas countries.[204]

The partition of Bengal and its counter effect the *Swedesh*[205]*i* movement had increased a tension among the mercantile communities of Calcutta especially those whom were associated with the overseas trade of Calcutta. Because there was a chance for diversion of goods exports from Calcutta port to Chittagong port. Another fear was the loss of import trade goods from overseas to the market of Calcutta because of the strong Motto of *Swedeshi* that denied using foreign goods in Bengal. 'Bengal Chamber of Commerce' protested against the government decision of Bengal partition.[206] However from the figures of overseas trade of Calcutta port within this period it can be concluded that *Swedeshi* movements did not affect the trade of the

[203] Nilmani Mukherjee: *Op.cit.*, pp.86-87.
[204] *Ibid*, p.89.
[205] Swedeshi Movement: an anti-British, movement roughly from 1905-1911, based in Bengal during the British rule in India. The real motto of this movement was boycott, to reject the British manufactured goods. This movement was started as against the decision for divide the Bengal by the British government.
[206] Nilmani Mukherjee: *Op.cit*, p.93.

Calcutta port. The figure of the imported cotton goods during the years under discussion is boldly supporting this assertion;

Table no. 2.12, Import Trade of Calcutta Port During *Swedeshi* Movement

Years	Import of cotton goods(Rs.)
1901/02	3,50,85,300
1906/07	18,62,79,442
1907/08	23.73,09,815

Source: Nilmani Mukherjee, *The Port of Calcutta: A Short History*, (Calcutta, The Commissioners for the Port of Calcutta, 1968), p.93.

Beside cotton many other were traded in this period. Like tea which had always a reputation for her export from Calcutta. Shipment of tea increased from 50,000 to 88,000 tons, skins from 26,000 to 60,000 tons, lac from 6000 to 21,000 tons, myrabolans from 15,000 to 42,000 tons and hemp from 1,400 to 16,000 tons. One of the remarkable export items was manganese ore and pig iron which had a shipment from 72,000 to 93,000 tons. There was a sharp decline in opium and indigo export trade from this port.[207] Jute was still the main item of export. Till the year 1907, Calcutta port used to ship to all Indian market with jute cloth and bags, export enormous volumes of jute to north and South America, Australia and Africa. The importance of jute in Calcutta's economy was then so enormous that the Gazetteer of India gave the mentioned remarks:" If it may be said that Bombay is build upon cotton, it is no less true that Calcutta is build upon jute."[208]

In case of items for import, iron, steel, railway plant, cement, timber, wood, paints, paper were important. The value of piece goods increased from Rs.11 crores in 1892-93 to 15 crores in 1902-03 and Rs.28 crores in 1912-13. Another item was the enormous import of sugar due to the development of sugar industries in Java. It is important here to mention that in terms of the proportion of share the trade between Indian ports and Calcutta port was relatively small than the trade with the overseas port.[209] Such enormous growth of overseas trade from the port of Calcutta sometimes faced hazards from different internal problems like the years 1897-98 when the plague and flood spread the western Bengal and caused to decline of supply merchandise.

[207] *Ibid.*, p.87.
[208] *Gazetteer*, 1907, *Op.cit.*, p.275.
[209] Nilmani Mukherjee: *Op.cit.*, p.93.

Some years ago in 1888-89 similar situation happened in the supply of salt from the Nepal and Bhutan to Calcutta due to the demands from the Tibetan soldiers in war period. [210] Here we can understand from the below table that what kind of share India had with the overseas countries in terms of trade and commerce as follows:

Table no. 2.13, Overseas Countries receiving Indian Exports (% of total export value)

Year beginning	Britain	China	Germany	USA	Japan
1860	43.03	34.85	0.42	3.64	-
1870	56.60	14.60	0.47	4.52	0.02
1880	31.20	18.79	0.43	3.28	0.14
1890	29.79	12.85	3.90	3.55	1.06
1900	37.93	10.79	8.13	6.37	1.86
1910	25.59	9.24	9.15	6.28	6.24

Source: Irfan Habib: *Indian Economy 1858-1914*, *A people's History of India*, vol.28, (New Delhi,Tulika Books,2008),p.129.

Some important points have to be noted from this above table. Throughout the entire period Britain was the main sharer of India's export trade. The share of china in India's export trade was in decline. Possible reason was the end of opium trade and rising sugar industries in South East Asian countries. And the most noticeable feature is though Britain was the main consumer of India's outbound trade but she was losing her proportion as Germany, USA and Japan were growing to capture Britain's share in world trade. In 1887 great Britain retained 58% of the Indian trade in her hand but this scenario was dramatically changed within a decades as after 10 years her share was dropping down to only 45% of total trade. Although till the end of the year 1889, Britain sold more or less £66.6 million goods. [211]

Thus Calcutta port in the period before the war broke out served the main proportion of Britain's Asiatic trade. It had established well link with the far distant countries and was successful in making a profitable trade relations with the foreign ports. The cause of the booming growth and developments of Calcutta port and its

[210] Report of the External Trade of Bengal with Nepal, Tibet, Sikkim and Bhutan for the year 1888-89, point.30.

[211] W.F. Oakeshott: *Commerce and Society: A Short History of Trade and its Effects on Civilization*, (Oxford, Clarendon Press,1936), p.358.

trade was its position in and under Britain's colonial domain. As before 1914, Britain was the biggest ship-builder in the world. More than 12.4 million tons of steam shipping was carried by Britain which was nearly 50% of total world's steam ships tonnage and her ships carried 52% of the total sea-borne trade of the world.[212] In 1904-05 the tonnage of steamships was 97.5% of total Indian overseas trade and within that volume, 84% of trade was carried under the British flag(followed by Germany, Austria, France and Norway).[213] Definitely Calcutta port was gaining profits from these contours of colonial world trade. The registered tonnage of Indian ships till the beginning of the First World War was 108,000 for steamships and 11,000 for sailing ships.[214] The size of the ships before the war also broadened. The size of *Sumatra* a Ship of P&O in 1867 was 2,022 GRT. In 1911 a ship of the same agency named *Maloja* was 12,340 in sized.[215]

D. Another transformation: Wars & Independence

The First World War closely affected the trade of the Calcutta port with giving negative results against its profit. The outlook of the Calcutta port entirely changed when the war came. In the war period an average of only 2 lakes a month was the total income of the Calcutta Port Trust. Tonnage of shipping also dropped from 2,925,801 in 1914 to 2,338,811 in 1915. In case of foreign imports it falls from 824,760 tons to 537,021tons. Exports through this port reduced at least 33% especially in the case of coal export. One of the reasons behind that was the cessation of imports and exports from all over the European ports. However there was some little increase in imports from countries like Japan, America and Scandinavia (perhaps for their neutral role in the war).[216] Silk manufactures, cotton goods, beer, glass and hardware were the main items of import from Japanese port to Calcutta. From USA the chief items of import was motor cars, iron and steel. In the war time Calcutta port enabled to export enough of tea, jute and gunnies from the docks. Later years from 1917 to 1918 were the crucial times for the port. The unrestricted attack by the submarine on vessels which were engaged in trade with Calcutta port reduced the port's trade. Moreover the withdrawal

[212] Irfan Habib: *Op.cit.*,p.126.
[213] Imperial *Gazetteer*, 1907, *Op.cit*, p.276.
[214] Irfan Habib: *Op.cit.*,p.126.
[215] Michael Pearson: *Op.cit.*, p.206.
[216] Nilmani Mukherjee: *Op.cit.*, pp.118-19.

of vessels from the eastern Indian Ocean to meet the losses of shipping in the Mediterranean world was another reason for this decline.

Fortunately the port of Calcutta was free from any direct physical attack by the war enemies. But the port was completely closed for 3 weeks when the German cruiser *Emden* sank 5 Calcutta steamers in the Bay of Bengal.[217] The position of Calcutta port from at least 125 miles away from the sea was perhaps the reason for her escape! During the war a new trade was developed between Calcutta/India and Australia. Indian army at the time of war was entirely depended upon Australian horses. For the Indian demand of horses a new colony was set up in Australia for horse breed named-Australind. At that decade total of 1,11,000 horses were traded from Australia to India.[218] Obviously this import was carried and handled by the port of Calcutta along with other Indian ports.

The era after the end of the war was a new era in Indian economic history. The war actually had quickened the opportunity of industrialization in India. After the war period for the first time Indian capitalists were began to play an important part in making governmental decisions. For example, 'Indian Industrial Commission' was appointed in 1917 which recommended the first steps towards planed development.[219] So generally this kind of forces in Indian internal history gradually helped for the prosperity of the India's foreign trade.

Another lucrative action by the government of India to facilitate overseas trade was paved considerable attention for the developments of the Lighthouses in Indian Ocean. This was started especially from the end of the war. After the war ended, several reforms were being undertaken by the government for improve light houses in the ocean. Before the reform lighthouse were under the control of local government, but now that lighthouses had been declared a central subject. Though prior to this period the British government take several steps for the lighthouse. There were 3 Lighthouse Acts in which covered the entire Indian Ocean;[220]

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[217] *Ibid.*,p.122.

[218] Michael Pearson: *Op.cit.*, p.196.

[219] *Ibid.*,p.124.

[220] WBSA, 'Lighthouse Administration In India' from the secretary ,government of India to the Marine Department of Bengal, Bombay, Madras, Letter no.5948, Quarterly Proceedings of Marine Department, January –April 1924, File no.2A-17(1).

1. Burma (Lighthouse) Act of 1879 covered the entire part of the eastern Bay of Bengal,
2. Madras (Lighthouse) Act of 1904 for the whole madras presidency
3. Sind coast Light Act of 1915 covered mainly Karachi port

Indian Port Act of 1908 was given the responsibility to the ports that they should maintain the Lighthouses near 3 miles from the port in both sea and river whichever was needed. Some of the lighthouses were maintained under government treasury like a Lighthouse in Aden. Some light houses were under the control of Royal Navy like in Rangoon and Port Blair. So in a letter no. 5948, in 1922 D.T.Chadwick Secretary to the Govt of India wrote to the marine department of Bengal, Madras, Bombay etc the urgent needs of a Uniform Act for control all of the Lighthouses in Indian Ocean. He further expressed his view that this could be done especially for the coastal ships that were entirely dependent up on the Lighthouses.[221] It is very relevant here to point out an interesting fact regarding lighthouses. During the time when the Indian marine department paid considerable attention for the improvements of lighthouse in Indian ports, same scenario was happened in the red sea and black sea. The British administration of that region also took some steps for the improvements of the lighthouses in that area, and possible reason was the growing profit by the maritime trade which made them to think about its improvements. In this area the profits rose to 73% of the total expenditure of the lighthouse between the years 1862-1913. So we can assume from the two events described above that those two different poles of Indian Ocean, East and West were equally connected with each others.[222]

Though the trade of the Calcutta port was not booming after the end of the war but it was in upward trends due to the effects of the mentioned governmental steps and world forces. The year from 1924 to 1925, officers of the port stated that the port was regaining slowly its premier role in overseas trade. For instance, tonnage of shipping was increased 7%-8% respectively. Increase of the size of vessels using the Calcutta port from 4000 to 5000 tons also noticeable. Improvement both in export and

[221] *Ibid.*
[222] Taner Albayrak: 'Ottoman Lighthouses in the Red Sea', in Dejanirah Couto, Feza Gunergin and Maria Pia Pedani (eds): *Seapower, Technology and Trade: Studies in Turkish Maritime History*, (Istanbul, Piri Reis University Publication,2014), p.148.

import were also recorded. The port's trade reached a peak in 1927-28.[223] This is the sign that Calcutta port was being recovered its prime stand in India's overseas trade from wartime effects. A remarkable sign of trade growth after the war could be seen even within a couple of years by the formation of 'Indian Mercantile Marine Committee' in 1923. In that committee out of 17 members, 5 companies were from Bengal like Marwari Chamber of Commerce, Calcutta Traders Association, Marwari Association,Calcutta.[224] Another sign was new jetties of Garden Reach were brought into operation from 1925.[225]Moreover this growth of maritime trade not only confined within the growing of commercial committees but also dramatically increase of steamships companies, shipping agents and shipbuilders in Bengal. The under mentioned table are consisting the list of shipping agents in two major ports of Bengal.

Table no. 2.14, Comparative Role of Natives in Maritime Trade and Shipping Between the Two Major Eastern Ports of the Indian Ocean (1922-24)

Sl. no.	Shipping, Clearing & Forwarding agents at Calcutta(port)	Shipping, Clearing & Forwarding agents at Chittagong(port)
1	Adam Oosman	Bulloch Brothers& Co.Ltd
2	Messrs. Allen Brothers & Co.(India) Ltd,	Munshi Abdur Rehaman Dubash
3	Anglo-Indian carring Co.	Messrs. Krishnadas Omurchand Roy
4	Balmer Lawrie & Co,	Messrs. Jagat Chandra, Brojendra kumar Roy
5	Calcutta Landing & shipping Co,	Messrs. Gour-ki-shore, Damudar Dutta
6	Hawrah Docking Co,	Munshi Abdul Goni
7	Messrs. Christie, white and Co,Ltd	Babu Beni Mohan Das

[223] Nilmani Mukherjee: *Op.cit.*, pp.125,126.

[224] WBSA, 'Indian Mercantile Marine Committee', from J.H.Green, secretary Indian Mercantile Marine to secretary, Marine Department, Government of Bengal, letter no.111, Quarterly Proceedings of Marine Department, January –April 1924, File no.12C-2(4).

[225] Animesh Ray: *Maritime India: Ports and Shipping*, (New Delhi, Munshiram Manoharlal Publishers Pvt. Ltd.,1995), p.159.

8	Cox shipping agency , Ltd	Abdul hamid sawdagor
9	Hurnandroy Fulchand	-
10	Oriental transport Co,	-
11	S.M.Ishak chandna	-

Source: WBSA, letter no.111, from J.H.Green, secretary Indian Mercantile Marine to secretary, Marine Department of Bengal, Quarterly Proceedings of Marine Department, January –April 1924, File no.12C-2(4).

Here it can be noted from the list that the proportion of natives in shipping are greater in Chittagong port than the Calcutta port. The name of agencies in the former from the list clearly derives 3 facts- the increasing numbers of natives in participating shipping, the closed partnership between the English and Indian merchants and lastly the partnership within the natives merchants itself for shipping. The list however says another interesting point- a considerable numbers of participating of Muslims agents in overseas commerce. But why the growth of native's participation in shipping industry occurred in Chittagong rather than Calcutta could be a matter debate. There might be many reasons behind that, but according to my opinion it was due to the cheapness of shipbuilding in Chittagong than the Hooghly or Calcutta. That's why the English also allowed the native enterprise. In 27 January, 1880 the government informed to the port officer of Calcutta that the 'cost of establishment of the vessel *Colombo* under the Burmese British administration is much lower than the expenditure on the Hooghly vessels. The *Colombo* has one *tindal* on Rs.20, while the Hooghly vessels have a *tindal* of Rs.22. [226] Between this time Some new laws for merchant shipping were introduced by the government in Calcutta port. One of them was the restriction of carrying fuel goods like gases and liquids on shipboard. It lunched from 1st april,1924.[227] The port also acted as an importer and exporter of Government currency notes, judicial/non-judicial Papers and Postage stamps. In the years of 1922, a total of Rs. 30,00,000 foreign currency notes were imported from overseas and Rs. 5,05,000 were

[226] WBSA, 'Committee on Marine Expenditure', Proceedings of Marine Department (Gen), January, 1880, File no.7, p.5.

[227] WBSA, from S.C.Williams, Chairman, Calcutta Port Trust to Secretary, Government of Bengal, Quarterly Proceedings of Marine Department, January –April 1924, File no.6R-64(1).

local export by this port.[228] Although this year the port/marine department faced a loss of Rs. 7,146 which perhaps forced them to do a short term trade of opium-export at the rate of 10 mount per month to Ceylon.[229] But unfortunately this endeavour of the port trust to reimbursement her loss in trade did not success as in the year 1924, total income from port was only Rs. 8,57,367 whereas her expenditure(for port only) was Rs.14,67,078.[230] In that time several steamships were used for serve individual officials. Like the ship named *Nancy*, for inspector general, *Celia* for the S.P of 24 Pargana, *MayQueen* for D.S.P(Bakhargang), and *Jessica* for S.P(Bakhargang) etc.[231] Perhaps it could caused extra expenditure upon the port.

Again it was the year of the great depression in 1929-33 that caused to down the growth rate of Calcutta port's trade. Both the volume and value of Indian exports in the depression period fall in considerable quantity. In 1929-30 the value of Indian export commodities was Rs.3.1 billion which was soon fall to value of Rs. 1.3 billion in the years 1932-33.[232] Britain which was still a chief partner in Indian ocean trade as well as Indian overseas trade similarly faced a gradual decline in her trade union memberships by 1930 fallen to 3¾ million from 8 million in 1920.[233] We have mentioned earlier that from 1850s general trends aroused among British merchants who being invested their capital for overseas trade. So this falling figure of trade union memberships clarifies the bad effects of depression in England. In those depression periods one of the remarkable progresses of Calcutta port was the construction of King George's Dock. It was opening by the Lord Irwin and the first vessel entering here was *Novara* a P&O steamer on Feb, 1929.[234] The chief urge behind the opening of dock was for the export of large oil-specific cargo.[235] The Great Depression affected the trade of the port as during 1930-31 total traffic handled by the port was 24% less than

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[228] WBSA, 'Administrative Report of the Agent for Government Consignment' ,from G.D.Waller, Government agent to Deputy Secretary, Govt of Bengal, Quarterly Proceedings of Marine Department, January –April 1924, File no.5R-49(1).

[229] *Ibid.*

[230] WBSA,'Summery of the Budget Estimates for 1924-25', Quarterly Proceedings of Marine Department, May-August, 1924, File no.6-B-5(1).

[231] WBSA, Quarterly Proceedings of Marine Department, May-August,1924 , File no.4S-2(20).

[232] Sugata Bose and Ayesha Jalal: *Modern South Asia, History Culture Political Economy*, Second edition, (New Delhi, Oxford University Press, 2010), p.106.

[233]Arthur Birnie: *An Economic History of Europe 1760-1939*, (London, Methuen & CO Ltd, 1962), p. 138.

[234] Nilmani Mukherjee: *Op.cit.*, p.144.

[235] KPTA, from an official published Pamphlet,'Maritime Heritage of Bengal & Port of Kolkata', 2009, p.24.

the previous years.[236] The direct result of the depression on port was that most of the accommodation of Calcutta port was remained unused in that time. This trend was continued till 1933-34. Fortunately the port was recovered from this falling by the new balance/rise of world trade again. After 1934 considerable sign of progress was happened like increase of imports of Burmese rice, steel, and machinery, sugar from java and wheat from Australia in the year 1938-39. One of the reasonable causes why the Indian ports like Calcutta sustained themselves from the effect of depression is still a matter of research. It is a fact that the after depression there was a trend of declining manufactured goods trade globally. The trade of the manufactured goods after the depression fall by 42% while trade of primary products fall just 13%.[237] As the countries like India was not entirely depended upon trade of manufactured goods, so she could easily escape herself from the bad effect of depression.[238]

Table no. 2.15, Improvements of Calcutta Port after Great Depression

Year	Total tonnage of Sea borne traffic
1937-38	8.939,755
1939-40	9,965,911

Source:, Nilmani Mukherjee: *The Port of Calcutta: A Short History*, (Calcutta, The Commissioners for the Port of Calcutta, 1968), pp.150-51.

This figure shows the growing trade of the Calcutta port in the post-depression period (though slow in growth-rate). It is worthwhile to point here from the above table that the trade of the Calcutta port was not affected after opening of the Second World War. In the meantime between the depression and the outbreak of the war there was a competition between the Indian railway and all the Indian ports/port trusts. As the railway suddenly dropped their carrying cost from Calcutta to Bombay the 'coasting trade' of the Calcutta port and other ports of India was seriously affected. A conference was held in Delhi in December 1935 between the representatives of Railway and Ports and Shipping. For solving this issue the conference concluded with an opinion, if the total outcome of profits from the railway would be less than the gross losses of the

[236] Nilmani Mukherjee: *Op.cit.*, p.145.
[237] Ronald Findlay and Kevin H.O'rourke: *Power and Plenty, Trade, War, and the World Economy in the Second Millennium*, (New Jersey, Princeton University Press, 2007), pp.458-459.
[238] *Ibid.*

Indian ports regarding coasting trade then the rail would not divert the traffic from sea route to railway.[239] Thus following the comment of Prof. Nilmani Mukherjee, we can also conclude that 'at the end of the period of depression the Port Trust, unlike many other similar bodies, held a position of stability and credit. Its financial position was sound; it had kept things going; it had successfully met the challenges that came one after another.' [240]

In the first stage of the Second World War it could not affected the trade and activities of the port. Calcutta was not seriously destroyed unlike other major ports of the world like London. But this situation was changed a bit when the Japan entered the war while direct participation of USA further expanded the war in the Asian waters. Total tonnage during 1940-41 falls from 10 million to nearly 7.5 million. In the next year 1942-43 this falling continued as not more than half of total tonnage of previous year was traded through the port. The immediate result of the war that the port commissioners of Calcutta experienced was a gross loss of income from trade. The reduction of their income was so much unbearable that the port of Calcutta continued to limit their necessary expenditure. For instance, publication of *Annual Administration Reports* by the port trust which was regular from its birth remained suspended during the years 1942-43 to 1944-45!!

Again the situation became worse when the *Bengal Famine* broke out in 1943. In those years the port of Calcutta was practically closed.[241]Later this situation was going to be out of controlled when Japanese air raid had bombarded the Kidderpore Dock on 05th December, 1943. The port was bombed twice by the Japanese force.[242] So after that it was quite impossible to recruit men in the docks for carrying works. 42 stuff of the port were killed in that attack. When the situation was continued to being out of controlled, a decision was made up for transfer or hand over the responsibility of the port to the American army. The American army paved great attention to facilitate the growth of the trade. They did something best to recover the fame of the Calcutta port. Even they created a record in the whole world of shipments of goods from the Calcutta port in war-time of 4,508 tons of general cargo only within 45½ hours. (It should be

[239] Nilmani Mukherjee: *Op.cit.*, p.151.
[240] *Ibid.*, p.158.
[241] *Ibid.*, pp.160-62.
[242] Sadananda Gupta: *Shipping Industry In India: Colonialism to Globalisation, A Spatio-Temporal Analysis*, (New Delhi, Pentagon Press,2016),p.26.

mention here that though the imports from foreign countries to Calcutta/India were considerably reduced, demands from the overseas countries of Indian foods increased. In that days of overseas demand for foods, the Indian capitalists exported enormous cloth and food grains to overseas ports for higher profits while their own country were in hungry.[243]) Though the port commissioners again took the responsibility and they also created a record of discharge shipments 6,536 tons in 63 hours from the king George's Dock, did again 7,064 tons in 51¼ hours from Kidderpore Docks.[244]

Thus Calcutta port recovered again from the disaster of world war and it continued to play role a major role in Indian Ocean economy since 1945-46. Calcutta Port had also celebrated the independent day in 15th August, 1947. In that day 25 foreign ships were in anchorage at the docks. The ships were also being prepared for the decoration in the Independence Day with flying the flag of the Indian Union![245]

Table no. 2.16, Increase of Total Sea-Borne Traffic of Calcutta Port after the War

Years	Volume (tonnage)
1945-46	10,883,443
1946-47	6,438,065
1947-48	6,949,528
1948-49	8,163,067
1949-50	8,774,821

Source:, Nilmani Mukherjee: *The Port of Calcutta: A Short History*, (Calcutta, The Commissioners for the Port of Calcutta, 1968), p.172.

2.6 Development of Calcutta Port after Independence

The hinterland of the Calcutta Port had undergone steady transformations over the past three hundred years. While discussing the early history of Calcutta port, we have seen that up to the beginning of the industrialisation of European nations, Calcutta port functioned as the gateway for cotton piece goods, handicrafts, silk products, and, to some extent, saltpetre. Nevertheless, during the time of the industrial revolution in Europe, its function shifted from that of a gateway for the manufactured commodities to that of a gateway for the transportation of raw materials to European nations and then for the

[243] P.N.Chopra, B.N.Puri, and M.N.Das: *A Social, Cultural and Economic History of India*, (Chennai, Macmillan Publishers India Ltd, 2009), p.201.

[244] Nilmani Mukherjee, *Op.cit.*, pp.164,165.

[245] *Ibid.*, p.168.

cultivation of cash crops such as tea, indigo, and jute. In due course, the discovery of coal in Bengal and the growth of coal and iron industries in Bengal and other parts of India, coupled with the expansion of railway networks, changed both the hinterland and commodity composition of the Calcutta Port. This again happened following the independence of India, when a large part of the jute-producing eastern Bengal was severed from the port. However, this fall in the total area of hinterland has not resulted in a decline in its financial and trade capabilities. Still, the Calcutta Port had enjoyed a large hinterland, consisting of states such as West Bengal, Assam, Bihar, Uttar Pradesh, and Orissa, comprising an area of half a million square miles, which accommodated a population of almost 180 million. In later times, though, the development of some major and minor ports on the east coast, like Visakhapatnam and Paradip, had an impact on Calcutta Port's hinterland.

A few years following independence, the trade of Calcutta Port showed a noticeable increase. The partition, as well as the decline of the global British empire, could not mitigate its importance in world maritime trade and shipping. Till the 1960s, an average of 60 to 70 ships from nations like Britain, America, Scandinavian countries, Japan, New Zealand and Russia had regularly visited the port daily, which jointly contributed almost eight million tonnes of cargo yearly. Based on this estimate, one scholar could rightly claim Calcutta Port as among the top ten ports of the world. In later times, the changing policies of the national government, such as import substitution, export promotion and industrialisation, increased the level of maritime trade through this port. Also, due to the changing nature of traded commodities, ships visiting the port also became varied, from less modernised cargo vessels to sophisticated, more complicated ships. As Calcutta was the principal gateway to the international trade of eastern India, the government paid special care to increase its status. This is evidenced when Lal Bahadur Shastri once said in 1955, "Calcutta is our biggest Port, and it will continue to be so".[246]

There were several noticeable developments that occurred in the port following World War II and independence. These included the restructuring and development of port administration, outlook, infrastructure, and technical improvement. The growth of

[246] Nilmani Mukherjee, *Op.cit.*, pp.193-94.

trade in the port after the war put pressure on the existing facilities of the docks. The problem was associated with three big issues. First, during wartime, the port was used excessively for supplying war materials. Most of the facilities of the docks for loading and unloading of goods were being used almost round the clock during the war, and as a result, there was very little repair and maintenance work done. This overload impacted the overall productive capacity of that equipment; most of which became outdated, deteriorated and antiquated. Second, after the independence, the national government paid utmost focus on the expansion of exports worldwide, followed by the policy of rapid industrialisation in the country, which included the procurement of heavy equipment. Third, after World War II, there was a rapid technological change in oceanic transportation, which included things like the growth of ship size. More bulk carriers and tankers were frequently visiting the port. So, to handle these two problems, it became an urgent need to replace the outdated equipment of the port and install new ones.[247]

2.7 War Effect: A Precondition of Containerisation

However, the real web of development, or a sense of upgrading the port's potential to meet the new demand for shipping, reached to every corner of the port authorities since the outbreak of the Second World War. Since the mid-nineteenth century, Bombay port has emerged as the principal gateway of international trade and commerce. Traders, importers, exporters and other groups associated with overseas trading began preferring Bombay instead of Calcutta. The partition of Bengal and the British decision of capital transfer from Calcutta to Delhi further deteriorated Calcutta's relative importance in maritime commerce. But again, the spread of World War II in the South-East Asian waters, followed by Japan's participation in the war, increased the importance of the Calcutta Port. The Bay of Bengal or the eastern shores got topmost importance to both the Allied forces as well as the Axis powers.

This was the time when several weaknesses and limitations of Calcutta Port were so explicitly exposed to the authorities due to the extreme pressure of wartime demand. The need to upgrade the port facilities was so radically felt. Since this time, a series of development schemes to improve the port facilities and infrastructure have been undertaken by the authorities. In fact, the real development towards modernisation of the

[247] *Ibid.*, p.173.

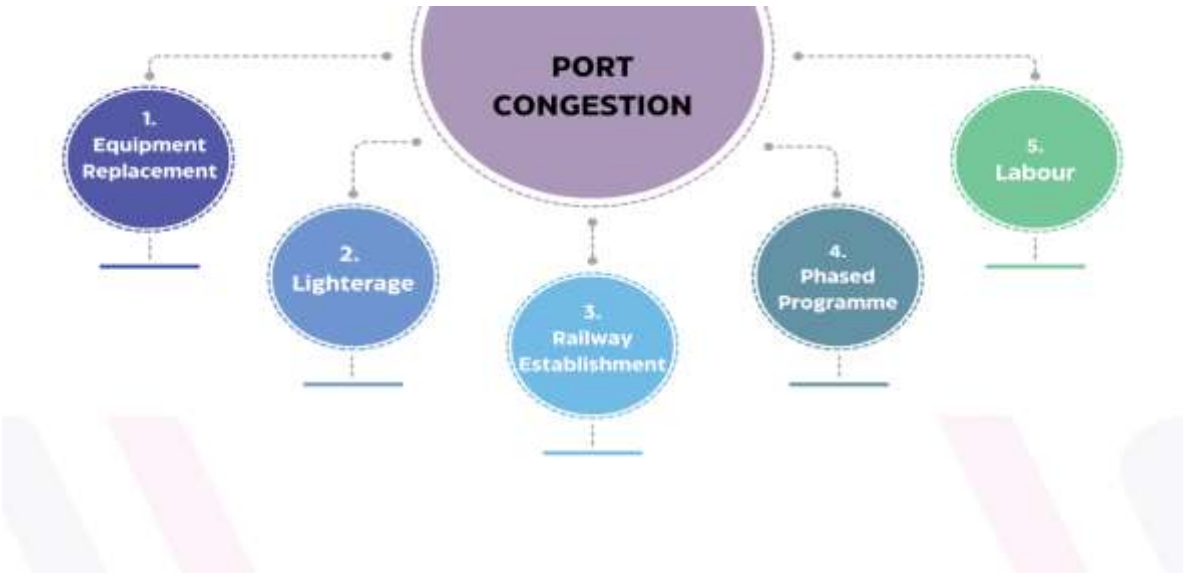
port began quite earlier than the inception and implementation of the Five-Year Plan. The first problem that the port began to face following the war was the problem of congestion in the docks at an extremely high level. As P. N. Talukdar, the then president of the Bengal National Chamber of Commerce, argued, the port congestion became 'a world problem'.[248] According to him, it was due to the unequal equation between the drastic growth of the world merchant fleet following the war and the relatively slow growth of the development of port facilities all over the world. However, for India, Mr Talukdar has pointed out several factors for which the Indian ports, especially Calcutta, faced a congestion problem. The first was the changing nature of India's overseas or export trade. Indian ports are generally used to ship/handle mainly finished products and export raw materials, and to some extent, cash crops. This was the very nature of the colonial world economy. But after independence, the national government of India adopted the goal of self-reliance, thereby setting up heavy iron and steel plants in India. A high volume of steel and iron, along with machinery and capital goods, had to be imported through Calcutta Port. It became very difficult to handle these types of cargoes using traditional methods. Therefore, it involved a lengthy process and took extra time. Secondly, the new equipment that was needed to handle special types of cargoes was mostly foreign-made, it involved a huge foreign currency remittance, and in most cases, the port authorities had to rely upon World Bank loans. That took a very long time to approve. Thirdly, after World War II, there were many technological changes happened to the shipping industry. Ships involved in international shipping became very large and highly complicated; they needed more deeper draft to anchor in ports. Due to the draft limitations of Indian ports, especially Calcutta, they could not release/unload the cargoes on time.[249]

Notwithstanding, the independence of the subcontinent did not come with a cargo boom in the port. In fact, the pressure of traffic in the port was quite low in the first few years following independence. In the whole decade of the sixties, the port's traffic showed a considerable fluctuation and was losing its import trade. A primary reason, beyond its navigational limitations, was the growth of local petroleum refineries and the production of crude oil, which decreased the internal demand. This seriously affected the financial position of the port because the petroleum trade involved low

[248] Kolkata Port Trust Maritime Archives (KPTMA), 'The Problem of Congestion', Calcutta Port Annual, published by the Commissioner for the Port of Calcutta, 1958, p.1651.
[249] *Ibid.*, 1652.

handling costs and generated mega revenue for the port. Also, the development of internal agricultural production in India reduced the dependency on foreign crops, thereby contributing to the decline of the foodgrains traffic of the port.[250] It was the enactment of the First Five-Year Plan that eventually increased not only the frequency of the traffic but also the volume of cargo in the port.[251] New types of cargoes, which include mainly capital goods and steel, need better and modern equipment for handling. The port had been facing a serious congestion problem at this time. To cope with this challenge and solve the present crisis, the port authorities undertook a series of developmental activities. The chart no. 2A portrays several types of developments:[252]

Graph No. 2A, Administrative Steps Towards a Better Port After The War



1. Lighterage: The first step the authority took was the development of lighterage facilities. For a riverine port, like Calcutta, this type of facility was extremely relevant. Lighterage can reduce the congestion of the port by providing a shipment service between big and small vessels when a mother ship cannot enter the port due to draft limitations. Additional lighterage points in the port had been established, and in a later time, a Lighterage Control Office was set up, which became operational in 1957 to look after the operation of the lighters.

[250] KPTMA/ Miscellaneous Files/ 'Financial Position of the Port of Calcutta', 1969, p.1.
[251] Ibid, 'The Changing Pattern of the Port of Calcutta', p. 1641
[252] *Ibid.*, 1641-1642.

2. Equipment: during the days of technological changes in world shipping, when ships were becoming more complicated, bigger and modern, it was felt by the port authorities to upgrade the infrastructure by replacing the old equipment with new ones. This was done by the port when a special team was sent to the UK, exclusively with the sole purpose of purchasing modern equipment. This team ordered several important equipment such as mobile cranes, travelling hoists, shunting tractors, etc.

3. Railway establishment: for the vast area of the hinterland and to some extent, the geographical factors of eastern India, Calcutta Port was heavily dependent on the railway services, which connected the port with the production centre of the hinterland. In the days of setting up heavy industries in eastern India, the railways became instrumental in providing the port with a better logistical service. The port in the decade of the sixties started remodelling and replacement of the old railway track, and purchased a total of 12 locomotives for the better functioning of the port.

4**. Phased Programme**: for boosting the efficiency of the port, the administration undertook a phased programme, especially for the replacement of old and outdated cranes with modern ones, so that the process could be finished within a certain period of time.

5. Management: The port also took steps to keep the various developmental works under the strict observation of the administration, as well as the berths, so that their output and working efficiency could be well increased.

6. Labour: In developing worlds, the working efficiency of the ports was heavily dependent on labour output, and that was connected with the port-labour relations. This is even true in modern times, where the port has traditional handling equipment. In the first two decades after independence, due to the growing congestion problem, Calcutta Port Trust took several steps to keep a healthy relationship between the authorities and the union and to increase the work efficiency of the port, such as a piece-rate scheme and decasualization. For example, a total of 1500 temporary labourers were transferred to the permanent cadre in 1957. Furthermore, the administration started paying equal wages to both the permanent and casual workforce.

Apart from the above-mentioned steps, Calcutta Port Trust also paid attention to the other sectors of shipping. For example, rent for the goods in the docks and

warehouses was increased for not clearing the cargoes on time by the importers. Working time was broadened by lowering the stoppage of work during the bore tide restrictions. And to quicken the turn-round time of ships, the port allotted special berths to be used only for handling special types of cargo such as iron ore. New transit sheds were established by using some unused spaces, such as the Union Jute Mills at Gurden Reach for Tea.

Undoubtedly, these steps taken by the authorities before and after the implementation of the Five-Year Plan helped mitigate the ongoing congestion problem in the docks and increased the port performance as well as port efficiency. For example, the Calcutta Port successfully handled a little more or less than 225,000 tons of iron and steel just within three months in the year 1958, which was quite more than 1953-54. This proves that the steps undertaken by the trust achieved their goal.

2.8 The Five-Year Plan

Calcutta's Till the 1970s, that is, the period before the arrival of containers in Indian ports, the development of Calcutta Port—like other major ports—was mostly attributed to the dynamics of India's internal economic policy, which can be explicitly demonstrated by analysing through the prism of Five-Year Plan projects. In the first Five-Year Plan, it was felt that improving the transportation sector to boost the country's economy and trade. Under this plan, the authorities of Calcutta Port placed the utmost importance on upgrading its fleet. This included the provision of purchasing 500 wagons and 21 locomotives, new lighters, dock tugs, survey vessels, an anchor vessel, and heave-up boats. The other areas that got attention next to the fleet was developing infrastructure to handle better the cargo in in the port which included construction of two additional general cargo berth, planning for constructing mechanical ore berth for iron ore export, a storage dump at King George's Dock, purchasing of 200-ton cantilever crane, development of heavy lift yard in the King George's Dock etc.

However, among all the projects, only four were finished during the First Five-Year Plan. This was chiefly due to the non-availability of materials or equipment and the delayed decision-making process in the inclusion of major projects.[253] In the Second

[253] Nilmani Mukherjee, *Op.cit.*, pp187-188

Five-Year Plan, which placed emphasis on industrialisation and an increase of national income by 25%, seaports received the focal point of attention. For example, the government allotted 29% fund of the total outlay of the public sector to transport and communication. One of the first moves of the port trust to cater for the growing trade and shipping was the installation of a giant electric crane of 200 tons, worth rupees 1.9 million in August 1957. The prime aim of commissioning this crane was to handle heavy materials.[254] During this plan, 40 crores were included for developing/modernising the dock facilities of the major ports. In Calcutta Port, many plans and projects were undertaken under the second Five-Year Plan, which was basically divided into two sectors. The first sector comprised a total of 29 projects assisted only by the International Bank loan. The list of projects was long: strengthening the quay walls of Dock 1, Kidderpore Docks, installation of electric cranes, installation of a 25-ton crane at King George's dry docks, underwater lighting arrangement, purchase of 30-ton and 60-ton floating cranes, purchase of a new suction dredger, improvement of ship repair facilities, and developing a tea warehouse. In the second category, a total of 16 projects were included, including the continuation of some previous ones. Most of the new projects in this category were associated with the development and modernisation of berths at the docks and the improvement of port railways to facilitate cargo handling. But alike the first Five-Year Plan, the port was able to finish 19 projects. This was basically due to the shortage of foreign currency, non-availability of shipbuilding steel and to some extent the long process of loan approval from the World Bank.[255]

But in the Third Five-Year Plan, in which the prime motive was to increase the agricultural production of the country and the per capita income of the people, no major scheme was supported by the government. Instead, the policy of the government on the ports sector was to improve the existing facilities and continue the previous ones. Some developments, such as the construction of an ancillary dock system at Haldia, the modernisation of Kidderpore Dock and a new navigational channel across the Balari Bar in Hooghly, were introduced. But perhaps the most important development of the port authority in this period was the idea of a satellite port near the

[254] Nilmani Mukherjee, *Op.cit.*, pp 194
[255] Nilmani Mukherjee, *Op.cit.*, pp 191-193.

Calcutta Port. It was this time that the planning of an extension of Calcutta Port at Haldia started and became more popular. However, lack of government support during the Third Five-Year Plan pushed the port authority to apply for a loan from the World Bank. As a result, the World Bank sent a special team to carry out a survey at Calcutta Port in 1961 and finally approved a loan of 21 million dollars. In this period, the port authority also stressed the dredging works at the Hooghly to improve the bars in the estuary so that more big ships could come to the port.[256] In the next Fourth Five-Year Plan, a new dry dock was constructed at the King George's dock, but again the Haldia issue received the topmost attention, for which the port received monetary assistance from both the Indian government and the Canadian Government.[257]

2.9 The Port and its Partners

A port's economic and financial vitality is largely entangled with the nature of its hinterland— how rich it is, its geographical dimension and the efficient transport networks that connect the interior to the port and after all, the productivity of the land, both agricultural and industrial. Likewise, Calcutta port's hinterland, since the beginning of the twentieth century, witnessed a rapid alteration of its nature from chiefly a land of cash crop suppliers to a land of heavy-scale industries. The emergence of large-scale iron and steel industries, together with the extensive coalfields in eastern India, played a decisive role in restructuring the trade dynamics of the port and solidified its status as a vital hub for both domestic and foreign trade.

But three partners proved to be the best allies on whom the port was heavily dependent for its prosperity. The first one is the Steel Authority of India Limited, commonly known as SAIL, since its independence. Due to the policy of self-reliance and rapid industrialisation perceived by the national government, public sector steel plants were established in the first two decades following independence. Since this time, Calcutta Port has been closely connected with this emerging engineering industry. Most of the machinery goods needed for setting up the plants at Durgapur, Bhilai, Rourkela and Bokaro were imported through the Calcutta Port. Also, the port served as a principal gateway to export the products of those steel plants. Both the value and

[256] Nilmani Mukherjee, *Op.cit.*, pp, 195-96
[257] Nilmani Mukherjee, *Op.cit.*, p, 200.

volume of this import-export trade to support the industrialisation were considerable. For example, in 1994, the value of imports crossed Rs. 150 crores, whereas the volume of export trade touched 80,000 tonnes. SAIL also imported a huge volume of coal through the Haldia Dock, which accounted for almost 1.8 million tonnes in the same year. Such a huge volume of trade, both import and export, through the Calcutta Port prompted both parties to come to sign an MOU(memorandum of understanding) by which a special berth No. 5 at Haldia was allotted to handle the coal import of the SAIL. Needless to say, SAIL's big import and export trade since the decade of eighties demanded efficient and modernised port facilities of Calcutta Port. This had resulted in the thinking of SAIL of establishing large warehouses in the Calcutta Port complex to cater for the export trade in the decade of nineties. Thus, the partnership through trade following independence aggravated the development and modernisation of both parties.[258]

The second most important ally of the Calcutta Port, as is always true with most of the Indian ports, is the Indian Railways. Initially, railways developed in colonial India to meet the two imperial purposes: for efficient administration and building a bridge between the hinterland and ports for easy movement of raw materials as well as manufactured goods. In post-colonial India, railways played a vital role as a connecting transportation network between the growing industrial base of eastern India and the seaports, especially Calcutta. As is already mentioned, to support the emerging heavy steel plants and coal industries of eastern India, it was essential to establish a well-connected transportation network that could act as a transporter of raw materials needed for the industries and furnish products for distribution. Calcutta Port was the prime gateway to eastern India for international trade, and thus, since the first decade following independence, there was special attention paid to developing the railway networking facilities by the Calcutta Port Authorities. This became very vital in the first phase of containerisation in India. This is evident with the conversion of certain metre gauge track to broad gauge by the port authority, coupled with the further extension of railway networks to the distant hinterland of the port, such as Nepal. Furthermore, as trade and shipping expanded, the port authority increased the rail terminal's handling capacity with the purpose of efficient handling of railway-borne cargoes. In the decade

[258] KPTMA, Calcutta Port 125yrs, published by the Commissioner for the Port of Calcutta, 1995, p. 227.

of the nineties, certain strategic steps taken by the Indian Railways, such as the introduction of new types of wagons having bottom discharge facility, and an MOU signed with the CONCOR, further aggravated the port's traffic and helped maintain its efficiency.[259]

However, nothing can be more important than a shipping line to a seaport, which can only tie it with the world markets and other national and international ports upon which its financial activity is largely dependent. Since its foundation, the Shipping Corporation of India (SCI) has played a pivotal role in sustaining and expanding the operations of Indian ports, particularly the Port of Calcutta. Primarily born as a state-owned national shipping line in the decade of sixties, SCI is the largest Indian shipping company and one of the largest among the fleets of the developing nations. The SCI's importance and involvement became instrumental since the advent of unit load and multimodal transportation in Indian shipping in the 1970s and 1980s, in which the share of SCI generally occupied. Beyond its contribution to liner shipping, SCI consistently maintained almost a complete monopoly over the Port of Calcutta's crude oil and petroleum product traffic through Haldia Dock. As a joint co-operation between the Calcutta Port and SCI, large tankers began trading with the Calcutta Port, such as the arrival of the Suez max tanker having 1,39,000 dwt in the 1990s. SCI has also contributed to the modernisation and development of additional docks at the Calcutta Port over time.[260]

2.10 Containerisation, The Port and the National Shipping in the 1970s

Although several endeavours were made to tap the potential of the Calcutta Port, in reality, it was still not favourable to its shippers. In a letter to the port authority, the Bharat Chamber of Commerce argued that Calcutta Port became uneconomic due to the high port charges, and partly for its increasing operating cost than the income from cargo.[261] This was the time when the need for national shipping lines was radically felt. Because it was directly connected with the country's ability to do overseas trade. After the end of their colonial rule, almost every developing nation felt the need to enhance

[259] *Ibid*, pp. 229-30.
[260] *Ibid*, p. 225.
[261] KPTMR/MIS/Bharat Chamber of Commerce, 'Chamber's View on the terms of reference of the commission on major ports', pp.1-4.

the potential of national shipping capacity, mostly due to their import substitution and export promotion policies. The lack of national carriers made them rely on foreign shipping companies for overseas trade.[262] India was the most notable example where the development of national shipping lines was not only noticeable, but it also had an adverse impact on other prominent foreign shipping companies in the Indian Ocean. This was felt to such an extent that once the P&O, one of the largest and oldest shipping companies in the east-west trade, commissioned an enquiry into whether the emerging fleets of the developing nations, notably India, would cut off their share in the Indian Ocean trade.

However, in India, the necessity to establish its mercantile marine was felt prior to independence. In the 1930s, the Indian government formed an enquiry commission to look into the present state of Indian shipping. In these years, Indian shipping lines made some progress against the discriminatory British shipping policy. While doing overseas trade, they had to face the rate wars with their counterpart British shipping firms; some of them survived, while others dissolved within a short period. At the beginning, independent India possessed a small national fleet:

Table No.2.17, Merchant Fleet of India at the time of Independence

	Coastal	Overseas	Total
No of Ships	48	11	59
G.R.T.	1,19,000	73,000	1,92,000

Source: Scindia Steam Navigation Company Ltd, Published papers, 1970.

But after independence, the national government took steps to increase the potential of national ships. Firstly, the government defined the term "Indian shipping" and fixed specific guidelines. The first and foremost among them was that a ship should be managed, controlled, and owned by Indians. Also, a ship should be registered at any Indian port. Although foreign capital was welcomed, at least 75% of shares should be invested by Indian nationals. The top-ranked post of director should also be occupied

[262] The colonial era was the actual genesis of this dependence. Historian Mookerji mentioned in his book titled Indian Shipping that only 0.8 per cent of India's oceanic trade at that time (1911, i.g. when the book was published) was carried out by indigenous ships. That is, the bulk of sea trade was carried out by foreign ships with an annual cost of 25 crores. See R.K.Mookerji, Indian Shipping: A History of the Sea-Borne Trade and Maritime Activity of the Indians From the Earliest Times. (New Delhi: Munshiram Manoharlal Publishers Ltd, 1999), pp.253-55

by Indians. Another important step was reserving 100% of the Indian coastal trade for Indian shipping lines. Also, to support the Indian shipping lines, the government made efforts to secure their cargo by allotting government cargo to be shipped only by the national carriers and urged the same in many bilateral trade agreements. However, the most significant development was the enactment of the Merchant Shipping Acts of 1958, a move that Indian shipowners had long requested. Additionally, the government promoted domestic shipping by establishing the Shipping Development Fund, which provided shipowners with low-interest loans. However, the national government's ability was constrained, and foreign organisations occasionally provided funding for the growth of the maritime industry. Japan has frequently supported India by granting loans for the growth of Indian shipping. It is interesting to note that Japan's own merchant fleet was expanding in the Indian Ocean trade at the same time. Such steps left an impact on Indian shipping, as the country's fleet had increased by almost 180,000 GRT by 1957.[263]

Map No. 2.A, Maritime Trade Networks of Scindia Steam Navigation Co.

Source: Scindia Steam Navigation Company Records

Since independence, both the state and private sectors have come to increase the capacity of the mercantile marine of the country. Both parties increased their share over time. Since the 1960s, the Shipping Corporation of India, a state-owned shipping firm, has come to dominate the country's overseas trade and positioned itself as the largest

[263] Annual Report, Ministry of Shipping and Transport, 1970, p.157.

shipping company in India. Its growth rate was heavily increased in the 1980s, and by 1987, it occupied 56% of the country's overseas trade. It claimed that "Few companies in the world and none in India matched this dynamic growth."

However, a closer examination of the statistics and sources reveals a more complex story. According to the proposal of the Shipping Policy of 1947, the growth of shipping was left mainly to the private sector; the government's responsibility was limited to providing some special provisions. During the difficult times of the foreign currency reserve crisis, private shipping companies took loans from foreign countries and purchased ships, under the condition that the repayment is only possible by earning foreign currencies through trade with the ships. So, this was a unique strategy that involved high risk. Even within three years, the private sector's participation in the nation's overseas trade reached an outstanding level. I want to mention a memorandum that the Scindia Steam Navigation Company prepared in 1950 and presented to the parliament. This memorandum demonstrates that Scindia and its affiliated groups held a significant stake in Indian shipping.[264]

Needless to say, both state and private participation have elevated Indian shipping to a prominent position among emerging nations. The success of Indian shipping lines is notably more commendable than that of other emerging nations, some of which are now developed maritime states. China and Singapore may be good examples. Until the 1990s, the capacity of India's merchant fleet was far larger than that of China. In India, SCI—the only state-owned shipping line—increased its potential and successfully emerged as one of the prominent shipping lines in the world. In contrast, Neptune Orient Lines—a state-owned shipping firm of Singapore—lost competitive ground in the maritime business soon after its foundation and was subsequently sold as a subsidiary to a French shipping company.

When looking over the records of national shipping companies, it has been noticed how often they incorporated national aspects in their public marketing. And because they emerged at the heyday of Indian nationalism and the Swadeshi movement, many of their mottos mirrored the Swadeshi spirit.

[264] IMU, Published papers on Indian Shipping, Scindia Steam Navigation Company, 1970, pp.225-227

2.11 Liberalisation Trumpet: Containerisation Proved Feasible

Container trade has started increasing in Calcutta since 1985. Its share reached three-quarters of the total cargo traffic of the port. Statistically, the growth rate of container traffic in Calcutta Port since 1980 was 240%.[265] Various studies conducted in the 1980s opined for further development of the port facilities to cater the growing numbers of containers coming to the port in the near future.[266] Throughout the decade of the nineties, Calcutta Port witnessed a massive trade growth in its overseas trade, both import and export, which reflected not only on its continuous upward direction as a premier position among all the major ports of India but also its overall financial position. This was possibly the result of two forces: the recommendation made by the Major Ports Reform Committee in the late eighties, which placed much stress on upgradation of or investment in its infrastructure, followed by the advent of liberalisation at the beginning of the nineties. But liberalisation definitely played a more vital role in boosting the port's overseas trade. It paid much more emphasis on international trade, capital investment and removed the foreign exchange cap. For coping with the growing demand for international trade, it became urgent to increase the potential of the major ports. Calcutta, still at the end of the twentieth century, was the prime gateway of eastern India, having the largest hinterland, including two neighbouring states – Nepal and Bhutan. So the role of the Calcutta Port to the overall interest of the country became very vital at the beginning of the liberalisation phase.

Just after the adaptation of liberalisation policy by the Indian government, there has been an increase in the cargo traffic both in the Calcutta Dock System (CDS) and Haldia Dock Complex (HDC). For example, CDS experienced an increase of its cargo traffic by 0.23% and HDC by 1.12% in the year 1993-94. Overall, with the growth of cargo traffic in both the CDS and HDC, the Calcutta Port's trade increased by 0.87% in 1993-94 than the previous year. Also, this trade growth was visible in four main types of commodities. They were Iron and Steel, Containerised cargo, Thermal Coal and Vegetable oil. However, among them, containerised cargo enjoyed a considerable

[265] KPTMA/ Inception Report for the Comprehensive Study on the Development of Calcutta and Haldia Dock Systems of Calcutta Port Trust, conducted by Japan International Cooperation Agency, June 1968, p.2.

[266] KPTMA/ Felixstowe Port Consultancy Service, 'Container Handling Study of the Calcutta Port Trust', pp.1-89.

growth rate, which, according to the Administration Report of the Calcutta Port Trust, occupied the second-highest among all major Indian ports. The port handled 1.104 million tonnes of containerised cargo in the year 1992-93, which increased to 1.487 million tonnes in the next financial year. This documented a 34.74% rise in containerised cargo in Calcutta Port just after the advent of liberalisation in India. This rise was also seen in both the number of containers it handled and the volume of containerised cargo. For instance, the port handled 80,925 TEUs during the year 1992-93, which rose to 1,02,018 TEUs in the following financial year, reflecting a 26.06% increase. This was the time when the Calcutta Port touched the one lakh figure in handling of TEUs for the first time! It is also to noting that the growth rate of containerised cargo in CDS, which was 38.66% in the year 1993-94, occupied the Second Highest among all major Indian Ports. However, unlike CDS, Haldia Dock did not enjoy the growth of containerised traffic in this period. This was due to several facts that include increased routing through CDS, and fewer ships call.[267]

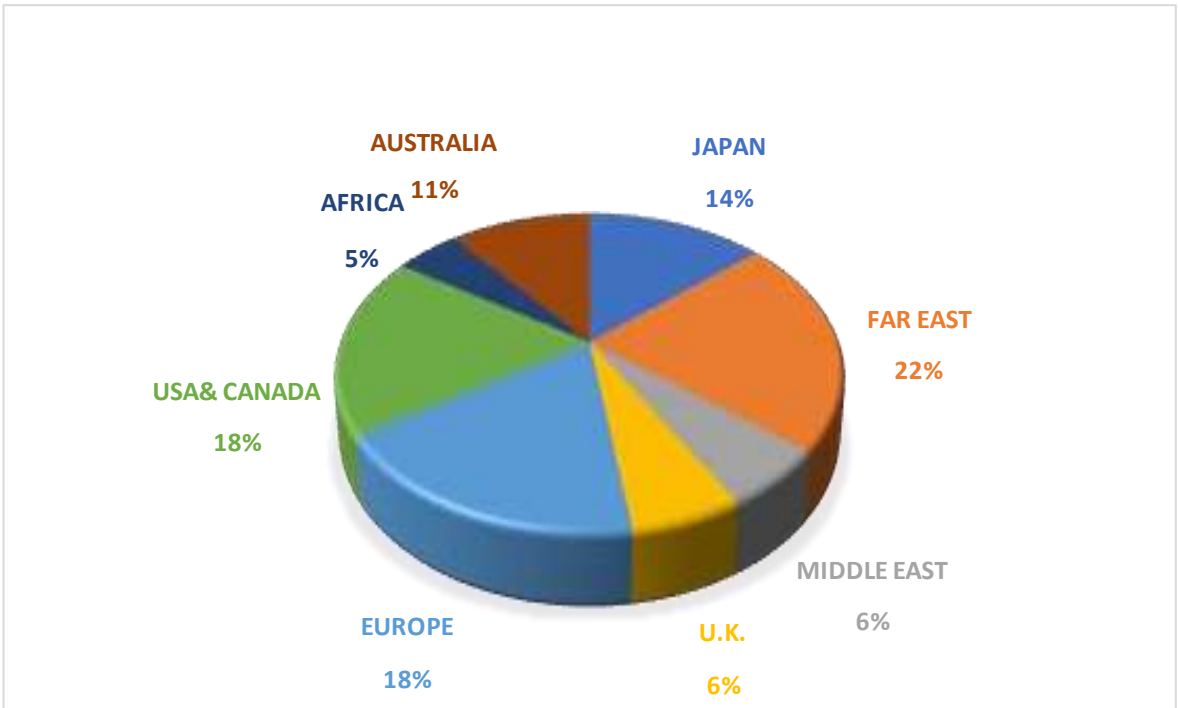
If we see the statistics of the import and export trade of the port, it is much clearer from the table that the trend of the growth of traffic, both export and import, actually started since the end of the eighties and was steadily showed an upward trend in the next five years. In that growth, almost all types of cargo showed a sharp growth rate. For example, the growth in import traffic was explicitly visible in commodities like general cargo, petroleum coke, edible oil, metal products, etc., in which the share of general cargo occupied the second rank, whereas Coal, Iron and Steel, Metal products, Foodgrain, tea and jute products showed a sharp increase in export trade. It is to noting that in export trade, there was a considerable and stable rise in commodities such as jute products, Gunny, Tea and metal products, which were already containerised for trade. So it can be argued that the containerisable products have played a crucial role in expanding the external trade of the country.[268]

One of the interesting points to be noticed from the statistics of the port is that CDS contributed more in handling container trade than the HDC. This was true with both the number of containers and the total tonnage of the TEUs the CDS handled in the year between 1993-94. For example, the CDS handled a total number of 96007 TEUs

[267] KPTMA, Administrative Report of the Calcutta Port Trust, 1993-94, p.915.
[268] *Ibid.*, p.918-919

(both import and export) in the said year, whereas the HDC only handled 6011 TEUs. In volume, the CDS handled 1398970 tonnes of containerised cargo, which was far greater than the volume of HDC, which handled 87939 tonnes of containerised cargo. In container trade, jute and jute products occupied the largest share in export front, followed by the Cast Iron Goods, Iron and Steel, and Tea.[269] The other noticeable fact on container trade is that Calcutta Port was well connected and traded with the overseas countries that had established themselves as some of the most advanced container trading nations in the world. As the pie graph mentions, the USA and European nations, which achieved enormous success in containerisation, occupied the largest share in Calcutta's container trade, both import and export. However, it is also noticeable from the data that the Asian share in Calcutta's container trade was considerable in volume. The Far Eastern countries, the Middle East and Australia all contributed a larger proportion in Calcutta's container trade.[270]

Graph no 2.B, Container Trade (Import) of Calcutta Port with Major Overseas Partners(1993-1994)



Source: KPTMA, Administrative Report of the Calcutta Port Trust, 1993-94.

The port showed a further improvement in traffic growth in the subsequent years, and by the end of the twentieth century, its financial position had become much

[269] *Ibid.*, pp. 924-925.
[270] *Ibid.*, p. 932-33.

higher than its former position. Between the years 1997-98, the endeavours made by the port administration to improve the proficiency of the port in handling cargo proved to be so radical that it brought about almost four prestigious awards from the government.[271]

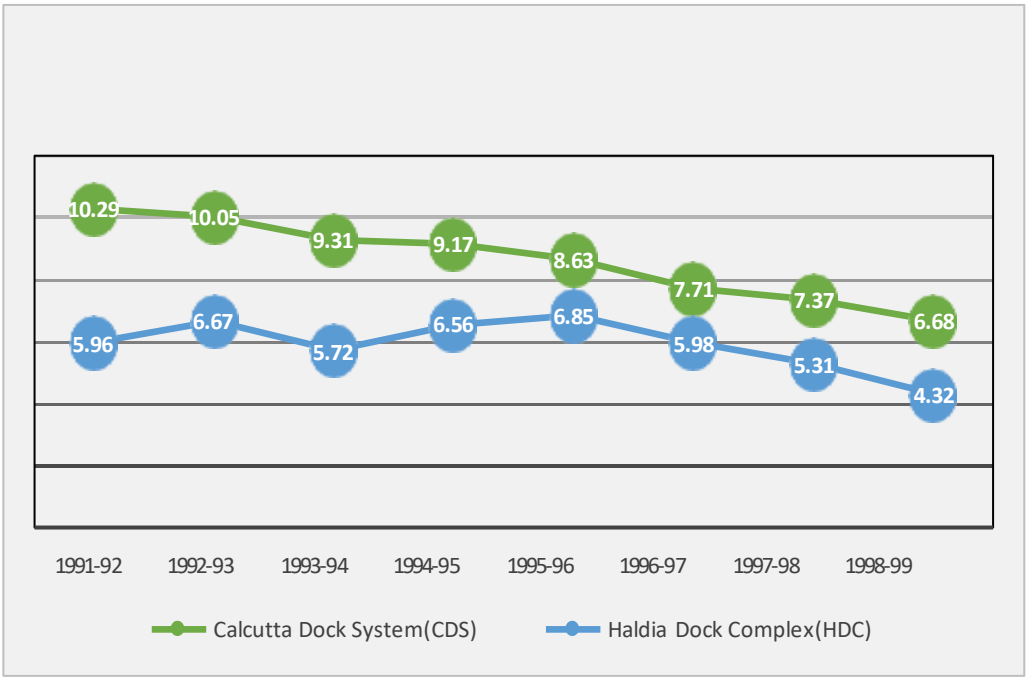
The first and foremost improvement that came to be noticed was the phenomenal rise in the traffic the port handled during this time. Generally, since the 1970s, the port's annual handling rate has been between 6 -7 million tonnes approximately. But in 1997-98, Calcutta Port successfully handled more than 28 million tonnes of cargo, which was the record-cargo handling rate over the last 129 years since its foundation. Such an improvement made the port authorities so upbeat that they targeted to achieve a rate of handling 55 million tonnes of cargo by the end of the 9th Five-Year Plan.

There were several important improvements took place in the field of technology, infrastructure and administration to boost the traffic. The first and foremost was the administration's keen stress upon the dredging works for keeping the river navigable and improving the draft limitation of the docks. The port made agreements with some foreign institutions to do the same. The first was a sister Port Agreement with the Port of Bordeaux, France, in 1997-98, having a total cost of 2.4 million French francs (FF), which is regarded as the first agreement that the Calcutta Port Trust made with a foreign port. The sole purpose was to improve the quality of the dredging work at Hooghly. Under this agreement, some improvements had been made in the field of technology, which could affect the better mechanisms of the Dredgers and survey vessels of the port trust. For instance, 3 style-charts and 3 Style-Dredge systems based on 'state-of-the-art technology' were imported and installed, which could produce the survey charts more quickly. Furthermore, for improving the efficiency of the work, the Drawing Office of the Chief Hydrographer has been modernised and computerised. The second step that the port started/adopted to improve the draft of the Haldia was a river-related scheme on the basis of physical model studies in collaboration with the Central Water and Power Research Station

[271] Between the financial year 1997-98, the Calcutta Port Trust, for its exceptional improvement in traffic received four awards from the Ministry of Surface Transport, Government of India. It secured the first award in two field, one for overall handling of vessels, and another for handling of liquid bulk ships both at HDC, and got second award for handling of dry bulk vessels at HDC, and handling of break bulk vessels at CDS.

(CWPRS), Pune. However, as this project involved a huge capital outlay (Rs. 444 crores), the port administration decided to conduct a feasibility study and handed over the responsibility to the University of Hamburg, Germany. Under this study, it was found in their preliminary report that the river-related scheme adopted by the Calcutta Port would be fruitful and could ensure approximately. 10.67 meters and 7.9 meters of draft for Haldia and Calcutta, respectively, for the whole year. Some of the other steps to improve the port efficiency were the opening up of a new channel, called the Bedford channel, in October 1997 for navigation, which could offer better draft for Calcutta-bound vessels.

Graph no. 2.C, Turn-round Time (days) of Ships Visiting the Calcutta Port (1991-1999)



Source: KPTMA, Calcutta Port Trust, Perspective of Development, December 1998, p.849.

Investment in developing infrastructure or the port facilities brought about significant positive results. The trade volume increased, but the share of container trade and its growth rate, among other developments, proved to be the highest. In Haldia Dock Complex, the growth rate was phenomenal and visible in both the number of TEUs and the containerised volume of commodities it handled, which were 220.62% and 222.22% respectively. This rate was far greater than the growth rate of other major cargoes such as POL (40%), Metallurgical coke (97%), and Iron and Steel (67.38%), however, Foodgrain again occupied the largest share, which was 312.50%. In the year under review, a total of 19413 TEUs were handled at Haldia, which was much greater

than Calcutta in where 8185 TEUs were handled. This growth probably induced the port authority to reopen the Balari Channel in 1998 with the purpose of handling the light-drafted container ships. This step further reduced the transit times of the container ships visiting Calcutta Port by 6-12 hours. Furthermore, to improve the turn round time of ships, the trust undertook several other important measures such as establishing good human relations with the port users, equipment support, supplying additional manpower and introducing Night Navigation in the dock. But container trade was not the only major player; oil tankers were also in the forefront. In the same year, a Giant Suez Max Tanker having the capacity of 1,46,000 tonnes of DWT visited Saugor, a proposed deep-water extension dock of the port of the Calcutta Port Trust. However, this was the time when the trust felt that the improvement of port facilities and equipment to cater for the growing traffic could not be possible by the government alone. It was the growing container trade, which involved a huge capital outlay (in the form of equipment import and super-structure development) and foreign collaboration (in the case of know-how), which forced the port authority and the government to open the port sector to private participation. The new port policy of the government allowed the trust to undertake joint ventures with the private/foreign parties regarding the infrastructural development of the port complex. Therefore, it can be well argued that growing container trade and containerisation both impacted the overall climax of the major Indian ports like Calcutta. In one way, growing container trade induced the port trust to improve the handling facilities of docks; on the other hand, investment in developing facilities and equipment further increased the container trade. Thus, the two processes were closely interlinked with each other.[272]

2.12 Conclusion

The modern industrial revolution in Europe and its unprecedented growth rate forced the peoples of Western nations to venture towards the Orient. It was those great myths and perceptions of the Western world towards the glorious, prosperous or fictitious Orient that played a vital but invisible role in their migration. Those perceptions and myths about the Orient were undoubtedly nurtured or transferred by the merchants who had a great deal with the overseas world. When they came, they encountered the

[272] KPTMA, Calcutta Port Trust, Perspective of Development, December 1998, p,850-53.

same reality as they had in their mind. That's why the British entered the trade of the Indian Ocean. They understood the enormous availability of many other profitable items for trade, except for pepper. They first destroyed millennia-old trading indigenous networks by establishing new ports around the Indian Ocean and then secured the supply systems of the ports by establishing political power over the Indian subcontinent, thus the hinterland of the ports was under control. The rise of Calcutta port was the outcome of that historic process. The first stage of British maritime trade in the Indian Ocean was the export of Indian manufactured products to the West. But later this movement changed, and Indian Ocean ports were the gateway of British industrial manufactured goods to the Indian market. Later again, after the mid-19th century, it altered as they acted as the outlet of Indian grains like rice/wheat/tea and manufactured goods like jute bags to the world. So the development of the Calcutta port was purely caused by the Indian overseas import and export trade, and especially by the birth of global trade after the 1850s. We have noticed that before this period, the development of Calcutta port was merely many plans and projects, but nothing was done. It was the global trade after 1870 that gave birth to the modern Calcutta port. And this connection between the world economy and Calcutta port continued till the great depression. But since the depression, world politics played an important part in Calcutta port's development. With many ups and downs, the Calcutta port, as the most premier port of modern India, played threefold tusks. It had served well for sustaining the colonial economy; it also affected the internal economy, like irrigation, canals or the development of communication in Bengal, its neighbouring regions, and even overseas countries.

In the postcolonial era, Calcutta Port improved many of its weaknesses and limitations. The trust upgraded the old equipment with new ones, collaborated with several development institutions and later on, paid keen interest in the development of containerisation. Calcutta had some preconditions, such as the subsidy of the central government, geographical position, and rich hinterland. Its position near the Southeast Asian countries made it a logical choice for a container port for trading with the eastern Indian states. Containerisation, in fact, opened the door to the worldwide mercantile networks for which the port could successfully survive and revive as a modern, prosperous port of India. The discussion and the sources show that Calcutta's urge

towards unit loads and containerisation since the late sixties was attributed to the gradual decline of its trade. It was the Containerisation for which Calcutta could sustain in the age of worldwide technological changes in shipping. It brought multinational capital, collaboration, advanced technology and induced bilateral trade agreements with most of the advanced industrialised countries. By and large, Containerisation saved the Calcutta Port.

CHAPTER - 3

Struggle Against the Cap: Containerisation in the Port of Bombay

CHAPTER BRIEFING

This chapter investigates the historical development of containerisation in the port of Bombay from the 1960s to the coming of the second millennium. However, a concise early history of the port and the Bombay Island since the coming of Europeans has been given as a briefing to understand the contours of continuity and change in this maritime port. This historical sketch further helps in making a comparison of Bombay with other European port cities in Asia. While digging through many travellers' accounts and contemporary Europeans sources, it is found that the British choice of Bombay for setting up a port was driven mainly to secure their commercial fate in the western Indian Ocean against their counterpart European nations, but also for its geographical position, suitable for a naval military base. Using the untapped official records and correspondence between the Bombay Port Trust and the national government for the first time, and to a large extent, the corporate sources mainly of private shipping firms and chambers of commerce based in Bombay, this chapter investigated three main questions: first, was there any precondition of containerisation in the port of Bombay? second, how did, and to what extent, the coming of containers affect the overall trajectory of the Bombay waterfront? third, how did it change Bombay's overseas trade pattern, and what was the response of the interest groups—such as exporters, importers, shippers— on the coming of the container age? An in-depth examination of these sources finds that the Bombay Port was well-aware of, although not prepared for, containerisation and its move toward containerisation in the initial phase was mainly attributed to the dynamics of import-trade patterns. Only after 1980, containerisation got the prime focus both from the port and the interest groups associated with shipping. Nevertheless, the port faced animus views on the development of port facilities both from various local bodies as well as the national government, which continued till the end of the century. This dichotomy ended up with the operation of Nhava Sheva, signifying the port hierarchy as a result of containerisation development in Asian shores.

The Emergence of Bombay as a Maritime Metropolis—Containerization –The First Phase, 1970-80— Congestion in the Docks—Problem of Pilferage— Regional Port Development—Warehouse Development—BCCI and the Bombay Dockyard—Feasibility Report—ESCAP on Bombay Waterfront—RO/RO in 1980-85—Container Freight Station—Container Handling Facilities—A Parallel Challenge: Bombay Port & JNPT—Environment as Impediment—ADB on Bombay Port—Liberalization Trumpet—Defending the Decline—Conclusion

CHAPTER -3

3.1 The Emergence of Bombay as a Maritime Metropolis

The evolution of Bombay (now Mumbai) from an obscure settlement into a thriving maritime metropolis—often hailed as 'urbs prima in indis' or the 'Alexandria of India'—was neither immediate nor inevitable. Prior to the mid-seventeenth century and the arrival of European powers in the Indian Ocean, Bombay stood in stark contrast to other west coast port cities of India. It was neither a significant commercial hub nor a well-developed settlement, but only acted as a 'coastal outpost' of most of the land-based powers in western India.[1] Contemporary testimonies and correspondence of European trading companies, especially the English East India Company (EIC), frequently portrayed Bombay as an unhealthy, underdeveloped, and commercially marginal place. During the time of the Portuguese rule, Bombay Island had a negligible commercial network, engaged in trade merely of exporting fish, coconuts, and salt with nearby coastal areas.[2] Its poor reputation among European traders is further evidenced by the frequent turnover of its governors and a tiny number of company officials stationed on the island during this early period. Materially, the decision of the two prominent European maritime nations—Portuguese and English—who established their political as well as business centres at Goa and Surat, respectively— both in relative proximity to Bombay—further reinforces the perception of Bombay's marginality. In contrast, Surat's established trading networks, administrative infrastructure, and commercial vibrancy made it a convenient choice. However, from the

[1] Meera Kosambi, *Bombay in Transition: The Growth and Social Ecology of a Colonial City, 1880–1980*, Stockholm: Almqvist and Wiksell International, 1986, p.204. According to the author, this island was an agrarian village with a small population until the thirteenth century, when a descendant of a Hindu dynasty of Gujarat migrated to Bombay Island and established their capital at Mahim. The Portuguese handed over the rights of its port and island to England in 1661 as a part of a matrimonial alliance between Charles II, the king of England, and Catherine of Braganza, the princess of Portugal. Later on, this island was further transferred to the EIC in 1667, mainly due to its economic unproductivity. For a detailed research-based description of the early history of the island of Bombay, dating back to ancient times, see Jose Gerson Da Cunha, *The Origin of Bombay, the Journal of the Bombay Branch of the Royal Asiatic Society*, 1900.

[2] *The Port of Bombay*, A Bombay Port Trust Publication, (year and place of publication unknown), p.5.

mid-seventeenth century onwards, a confluence of geopolitical factors contributed to Bombay's metamorphosis from a marginal outpost to a centre of strategic importance. The political stability of Surat was threatened by repeated Maratha invasions, while access to bigger ships was progressively impeded by the harbour's gradual silting. Bombay, on the other hand, had the capacity to handle larger ships due to its natural harbour, deep draft, and protected anchorage. These adversities took the wind out of Surat's sails and instead brought Bombay into the limelight of Indian Ocean maritime history. And such features got ground in the age of expanding overseas trade between the East and West. Regarding the harbour of Bombay, Antonio de Mello e Castro, the Portuguese Viceroy of India, informed the King of Portugal in a letter written about 1662 that "This is the *best port* your Majesty possesses in India, with which the city of Lisbon is not compared, treated as of little value by the Portuguese themselves" (emphasis mine)[3]. Additionally, its geographical position enabled the English to exercise greater control over the western coast of India and counter the influence of both Portuguese and Dutch maritime powers in the Arabian Sea.[4] As Meera Kosambi has rightly observed in her recent research, Bombay came to be viewed by the English not merely as an economic fortune but as a critical node, an important nexus for both their defensive and strategic maritime calculus.[5]

To transform Bombay into a viable commercial centre, the English undertook a series of targeted policies. Among the most significant were economic incentives granted to merchants and traders, including the abolition of import and export duties for those operating out of Bombay. Religious and civil liberties were occasionally extended to attract skilled individuals facing persecution elsewhere. Bhimji Parekh[6], a prominent merchant from

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[3] Quoted in Jose Gerson Da Cunha, *The Origin of Bombay*, op.cit., p.5.

[4] Ruby Maloni (2002). 'Surat to Bombay: Transfer of Commercial Power'. *Itinerario, vol. 26*, pp 61-73

[5] Meera Kosambi, 'Commerce, Conquest and the Colonial City: Role of Locational Factors in Rise of Bombay', *Economic and Political Weekly, Vol. 20, No. 1* (Jan. 5, 1985), pp. 32-37.(p.32)

[6] Bhimji Parekh was a successful merchant in seventeenth-century Surat. At the initial stage, he worked with the English company and gained a prize (a medal and a chain of gold) for his service. He also led a non-violence campaign with the Baniyas against the Mughal officials in Surat for their religious persecution against the Hindu community, and this time he demanded asylum from Gerald Aungier for their resettlement in Bombay. He wrote to the government, "1,200 tons of goods here in your factories, all of which would have been embargoed, your ships lose their voyages and lie demurrage and your island of Bombay became an eyesore to the King". Surat's economic decline and Bombay's commercial rise both were attributed to his movement, as at this time approx. 8000 merchants based in Surat migrated to Ahmedabad to find a better place to live against religious fundamentalism.

Surat, for example, migrated to Bombay to escape religious constraints and was instrumental in enhancing the city's commercial profile. In 1672, the EIC even started sending *Baniyas* to different parts of India to invite merchants to settle in Bombay.[7] These outward and inward migrations of the people—or at times, intrusion—made Bombay within a short period a cosmopolitan place where people of different origins and castes collectively contributed to the societal development of this nascent and infant island city.[8]

Two figures played particularly instrumental roles in Bombay's transformation: Sir George Oxinden and Gerald Aungier**.** As governors, they initiated strategic interventions that laid the groundwork for Bombay's commercial and geopolitical ascendancy. In Aungier's own words, Bombay was "the city which by God's assistance is intended to be built."[9] He undertook a series of administrative and infrastructural reforms aimed at consolidating the scattered islands into a single political and territorial unit—a crucial step in the making of what would later become modern Bombay.[10] This was done during his long stay in Bombay between 1672 and 1675 AD.[11] Outside of the administrative sphere, he gave utmost importance to developing Bombay into a commercially vibrant place. The local inhabitants were granted privileges that allowed them to expand their trading networks across India, including the ports of southern India. Furthermore, the EIC encouraged members of the Parsi community—who possessed traditional expertise in shipbuilding—to

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For detail see, Balkrishna Govind Gokhale, *Surat in the Seventeenth Century: A Study in Urban History of Pre-modern India* (Scandinavian Institute of Asian Studies), Popular Prakashan, Bombay, 1979.

[7] Ruby Maloni (2002), 'Surat to Bombay', Op.cit.

[8] In an account written in 1674, Bombay was depicted as a cosmopolitan place in character: "The people who live here are a mixture of most of the neighbouring countries most of them fugitives and vagabonds", quoted in James Douglas, *Book of Bombay*, Bombay, Bombay Gazette Steam Press, 1883, p.49. And it is worth mentioning that such a cosmopolitan nature of this city was further continued in the British colonial era; a traveller of the first half of the nineteenth century said about Bombay, "the inhabitant of Bombay are composed of persons from almost every Asiatic Nation….and the toleration of all religion: Persees, Mahometans, Gentoos, Arabs, and Roman Catholics are alike protected.", see William Milburn, *Oriental Commerce*, London, 1813, p.171.

[9] Behramji Malabari, *Bombay in the Making*, London, 1910, p.18.

[10] Historically, what is now known as modern Bombay was a group of seven islands. These were Colaba, Old Women's Island, Bombain, Worli, Mahim, Mazagon, and an unnamed island. At the time of Aungier's reign, the total circumference of these seven islands was estimated to be about 20 miles. See Meera Kosambi, *Bombay in Transition: The Growth and Social Ecology of a Colonial City, 1880-1980*, Stockholm, 1980, p.30.

[11] J. P. de Souza, 'Gerald Aungier and his Project of Planting an English Colony at Bombay' *Proceedings of the Indian History Congress, 1968, Vol. 30* (1968), pp. 325-330.

settle in Bombay and contribute to the development of a local shipbuilding industry.[12] Apart from these strategies, the EIC made tremendous efforts to increase the suitability of Bombay Island in international maritime trade. One of them was the development of docks in Bombay. As early as the mid-seventeenth century, the island's strategic location was widely acknowledged. It is a fact that despite being economically marginal throughout the early stages of the European era, the Island of Bombay continued to draw a lot of European traders and travellers due to its excellent nautical setting. In a historical account on Bombay Island compiled and written in 1661, one of its contributors praised Bombay's maritime advantage. He stated, "it is reputed one of the most famous havens of all the *Indies*, as never being choked up by the storms or yearly Monsoons, but efforts at all Seasons, Receptions and Security for the whole fleet".[13] This is further evidenced when the Bombay Council in 1686 brought to the attention of the EIC the need to establish a dry dock in Bombay.[14]

Initially, this proposal was sanctioned by the higher authority, but a serious impetus for dock development was only started in 1748 when the government officially chose the Mud Basin area to develop a dry dock, and it was finally opened in 1750. Till 1765, Bombay was the home of three docks, and in the subsequent years, some private companies like P&O, Viegus, etc., started constructing dry docks in Bombay dockyard to cater to the growing demands of larger European vessels. The spark of dock development in Bombay got further momentum during and after the Crimean War, for which some other docks, such as Prince Dock, Victoria Dock, and Sasson Dock—the pride of the Bombay dockyard—were constructed (perhaps for imperial military exigencies).[15] This strategic turn did strengthen the maritime economy of Bombay and lessen the EIC's reliance on expensive imported ships, thereby establishing Bombay as a self-sufficient node in the colonial shipbuilding economy. Thus, by the close of the eighteenth century, Bombay's dockyard had become a symbol of maritime prestige and technological competence. The author of *Oriental Memoirs* lauded Bombay's maritime superiority as follows:

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[12] Behramji Malabari, *Bombay in the Making,* Op.cit., p.8.
[13] *A Description of the Port and Island of Bombay*, London, 1724, p.4.
[14] V.S. Kamat, 'Rise and Development of the Docks on Bombay Island During the 18TH & 19TH Centuries', *Proceedings of the Indian History Congress*, *Vol. 35*, (1974), pp. 296-299.
[15] Ibid, p.297.

> the harbour is large, and secure from the storms and hurricanes which are very frequent and destructive at Surat bar, and on the Malabar Coast: near it were three excellent docks, which I believe are since increased in number; and spacious marine-yard,……here they build vessels of all sizes, from a ship of the line, to the smallest grabs and gallivants, employed in the Company's service: the timber used is chiefly teak, the most valuable of the Oriental forest woods, and more durable than the oak: the master builders and shipwrights on the Parsee tribe, are very skilful, and exact imitators of the best models from Europe.16

Through these cumulative efforts—strategic, economic, and demographic—Bombay, once frequently represented as the "poor little island" in Samuel Pepys's diary[17], evolved within a century into a vibrant commercial and maritime centre. It developed a robust network of trade linking its hinterland with the coastal and international seaports of western India, solidifying its place as a cornerstone of British colonial maritime strategy. By the mid-eighteenth century, Bombay's prestige in its maritime environment and infrastructure became a common point of reference among the Europeans. It established trading linkages with all important destinations and was able to take part in important commodity flows worldwide. An English traveller of eighteenth-century India commended:

> Bombay was then one of the first marts in India, and employed to great number of vessels in its extensive commerce. Bussorah, Muscat, Ormuz, and other ports in the Persian Gulph, furnished its merchants with pearls, raw-silk, Carmenia wool, dates, dried fruits, rose water, ottar of roses, and several other productions. Arabia supplied them with coffee, gold, drugs and honey. A number of ships annually freighted with cotton and bullion to China, returned laden with tea, sugar, porcelain, wrought silks, nankeens, and a variety of useful and ornamental articles. From Java, Malakka, Sumatra and the eastern islands, they brought spices, ambergris, perfumes, arrack, and sugar: the cargoes from Madagascar, the Comorro isles, Mosambique, and other ports on the eastern coast of Africa consisted chiefly of ivory, slaves, and drugs…..The exports consisted of English woollen cloths of every description….A great deal of cotton, imported in boats from Surat, Baroche, Ahmood, and Jamboseer, was shipped in large vessels at Bombay for Madras, Bengal, and China.[18]

Bombay's domain in maritime trade was far from monopolised by the English alone. As the above historical account portrays, ships of other European nations, such as Portuguese, Danish, and Dutch, and to some extent American, extended their trading interest with

[16] James Forbes, *Oriental Memoirs*, Second Edition, London, 1834, p.94-95.
[17] Behramji Malabari, *Bombay in the Making*, London, 1910, p.18.
[18] James Forbes, *Oriental Memoirs*, op.cit., p.96-97.

Bombay's harbour, signifying its success in attaining global connectivity in the nineteenth century. Apart from the European picture, indigenous mercantile communities, particularly Parsis and Banias, played a significant role in sustaining and expanding the commercial life of the port and often contributed as intermediaries, financiers, and shippers in a *hybrid* colonial economy.[19] Contemporary observers and later scholars have frequently attributed the port's exponential growth to two primary developments: the rise of British maritime commerce and the opening of the Suez Canal in 1869.[20] Yet, the story of Bombay's maritime ascendancy is not only confined to commerce and shipping; it equally advocated for the industrial output as well. Bombay also grew into a centre of shipbuilding during this period. The author of *Oriental Commerce* praised its shipbuilding activity and admired its quality. He said,

> Bombay claims a distinguished rank among our foreign naval arsenals. It has always been famous for ship-building, and formerly supplied Bengal and other parts of India with shipping, and when any considerable repairs were wanting, they were obliged to proceed to Bombay to have them affected….within these few years, many merchant ships of considerable burdhen, from 600 to 1300 tons, for the country trade, and the service of the East India Company, have been built here, which, in point of beauty of construction, excellent workmanship, and durability, are superior to any class of merchant ships in the world.[21]

And so was the development of the metropolis of Bombay well connected with the development of the port. In the nineteenth century, the port of Bombay became the major entrepôt of the east-west transoceanic colonial trade networks. Although under the EIC, Bombay's trade was considerably high, the real impetus came after 1813 when the EIC's monopoly over Indian trade was curtailed—restricted solely to commerce with China— and this withdrawal of the trading embargo on other private merchants fetched a trade boom in Bombay, particularly of its cotton exports to England. For instance, Bombay witnessed a threefold increase in its export trade of raw cotton between 1809 and 1816 (from 30 million lbs. to 90 million lbs).[22] The city's export economy remained predominantly extractive, centred on raw materials like cotton, while its imports were dominated by British-

[19] Ibid.
[20] Behramji Malabari, *Bombay in the Making*, op.cit., p.11.
[21] William Milburn, *Oriental Commerce*, op.cit., pp.171-172.
[22] S. M. Edwardes, *Census Of India, Volume X, Bombay (Part Iv, History),* The Times Of India Press, 1909, P.109.

manufactured goods—a classic illustration of the imperial pattern of asymmetrical trade.[23] Historians and scholars have acknowledged the fact that, throughout the city's prosperity, fame, urbanisation, and commerce, in all of its development, the port and harbour continuously stood as a stark backbone behind, possibly for which the city gained marvellous prestige from its contemporaries. In 1879, one of its governors rightly observed, "Not only is it superior to every other city of India, but it is almost equal to such cities as Cairo, Constantinople, Bagdad, Ispahan, and Canton."[24] However, since the beginning of its journey as a port of trans-oceanic maritime trade in the late eighteenth and early nineteenth centuries, most of its development was attributed to the investment and infrastructure of the major shipping companies like P&O and BIS, among others. Initially functioning under contracts with the colonial state, these private shipping lines gradually entrenched themselves in port operations, often shaping the spatial and economic contours of the harbour. A striking example of this dynamic was the Elphinstone Land and Press Company, which garnered massive profits during the American Civil War—a period that triggered a cotton boom through the port of Bombay as international customers shied away from blockaded Southern U.S. ports. Occasionally, such windfalls brought wind in favour of the private firms like Elphinstone, which gained substantial leverage in manipulating local port affairs, especially in determining land use and harbourfront developments. Since this time, the growing influence of the private firms (mostly shipping) alarmed the government and sparked a need for a public regulating body, which would be the sole official body to keep the whole port under control. The ultimate outcome was the birth of a port trust. By the Bombay Port Trust Act of 1873, the Bombay Port Trust was established, by which certain special powers, which include the levy of tax on goods transported through this port and others, were vested to the trust— allowing it to better align the port's management with imperial trade interests.[25]

[23] A.D. Pusalekar and V.G. Dighe, *Bombay Story Of The Island City*, Bombay, All India Oriental Conference, 1949, pp.71-72.

[24] Rihard Temple speeches. Cited in James Douglas, *Book of Bombay, Op.cit., p.558.*

[25] *The Port of Bombay*, op.cit., pp.18-19. Also, V.S. Kamat, 'Rise and Development of the Docks on Bombay Island', op.cit. pp.298-299.

In the years following the birth of the port trust, many improvements were made. In its initial phase, the Trust briefly prospered. The devastating famine and human suffering led to a surge in food grain imports, which brought significant commercial traffic and revenue to the port. However, this profit proved to be a paradox and likely a short-lived windfall, as within a short period, the port faced a deficit of more than two Lakhs rupees. This maiden financial crisis exposed much of the port's foundational deficiencies, leading to thinking about some administrative and technical upgradation for the port, and to some extent, the government intervention in culminating the new Bombay Port Trust Act of 1879. This new reform paved the way for the inclusion of non-governmental stakeholders in port authorities. With this act, the Bombay Chamber of Commerce was entitled to the rights to elect five trustees in the port.[26] However, a close look at this event reflected not only an administrative transformation, but also something more ideological. It reflected a growing recognition among the colonial authority that the vitality of colonial port infrastructure hinged on the synergy between state authority and mercantile capital. Trade and shipping volumes increased over the years, especially after the Suez Canal was significantly deepened, which reshaped international shipping lanes. In response to these developments, the Bombay Port Trust started important infrastructure improvements.[27] An early response to the changing regimes was the construction of wet docks to handle longer, deep-draft vessels and the introduction of new facilities to handle oil tankers.[28] But the phase of steady development of the port came to a halt with the outbreak of the First World War (1914) and continued till the end of the total war (1939). In between, many negative variables, such as the shortage of labour force, the Depression effect on the overall world economy, the industrial depression of 1937, and the explosion on the docks during the war, caused the deterioration of the port's traffic. By and large, within this time lag, the port witnessed intermittent growth overshadowed by geopolitical volatility and economic downturns. Not until the last phase of the Second World War did Bombay Port witness a partial revival,

[26] *Tides of Time, History of Mumbai Port*, Mumbai, Mumbai Port Trust Publication, 2000, p.81.

[27] The birth of the Port Trust as an administrative body and its subsequent development programme left an impact on the city's external trade as well. The case of Bombay's wheat export could be taken as evidence. Before the Port Trust establishment, it amounted to 150 tonnes, which withorin ten years reached 231,402 tonnes. This indicates the proficiency of the port also. Ref. S. M. Edwardes, *Census Of India, Volume X, Bombay*, Op.cit.,p.140.

[28] Baldeo Sahai, *The Ports of India*, Publication Division, New Delhi, 2017.

largely due to wartime exigencies and, to some extent, Japan' intrusion in the Second World War, which traversed the maritime trade of the Bay of Bengal to the Arabian Sea.[29]

Before discussing the modernisation of one of the country's largest seaports, it is very important to know about the development of Indian shipping just after independence, as it is closely linked with the maritime trade at the port of Bombay. Although India had a deep track record in oceanic trade and shipping in world economic history, it gradually reduced in the beginning of the colonial era. Throughout the entire colonial period, Indian shipping did not receive any kind of state support from the British government; instead, the colonial government took every step to support their shipping lines, which caused the decay of indigenous shipping businesses. This decline was evident during the early phase of British rule in India. However, at the end of the 19th century and the beginning of the 20th century, some Indian shipping companies made significant efforts to rise and survive against the dominant imperial shipping systems, thanks to the courage and struggle of some then-native entrepreneurs. Not every endeavour had success; few of them survived, and those who survived played a key role in the development of the Indian maritime world, especially in the sector of merchant shipping after independence.

Bombay Port's progressive story took a turn in the immediate aftermath of India's independence, although some of its forces were already in the pipeline since the wartime explosion. But most of its practical developmental adventures came under renewed focus within the framework of India's Five-Year Plans until 1970, when the *unitization* came as a new *challenge* to the port authority. The post-war years saw considerable investment in infrastructure: transit sheds damaged during the war were replaced by new ones, additional warehouses were set up, and outdated hydraulic cranes gave way to modern electric ones — all intended to enhance the port's efficiency in cargo handling. While general cargo remained at the forefront of its operations, the port authorities also took initiatives to develop other ancillary facilities, such as a marine oil terminus. By the 1960s, however, the port began to grapple with growing congestion, a reflection of its increasing stature as the most prominent

[29] *Tides of Time, op.cit.*, pp.106,111.

maritime hub for western India's shippers.[30] This was the time of a critical juncture, when the webs of worldwide containerisation—shipping of goods and produces into a metal box— began to hit the shore of the Bombay Port, which in later times proved to be "transformative" both for the port and metropolis, while it fetched with various administrative as well as operational challenges not only to the port authority, but also for shippers, exporters, importers, firms, chambers of commerce, freight forwarders, stevedores, and entrepreneurs as well.

3.2 The Advent of Containerization

Mumbai Port's journey towards containerisation started in the 1970s. But the forces or surge to technology actually appeared in the 1960s when a tanker was first imported to this port by a shipping company named Jayanti Shipping. The official records indicate that the initiative for modernisation of the Mumbai port and technological upgrades was first taken by some of the major shipping lines at this time. Among them, at the top was M.A. Master from Scindia Steam Navigation, based in Mumbai. Not only Mumbai, but M.A. Master also served a very important role in the development of independent India's shipping.

The available data clearly indicate that since the 1970s, the port trust has taken significant measures and made considerable efforts to improve container handling. It is evidenced from one note given by an employee of Philips India, who was working on lighting the whole dock complex. He reported to his higher authority that the earlier plan to set up several electric poles in the dock was abandoned by the trust since this could hamper the easy handling of the containers. Instead, the company fixed their plan to set up a single light tower at the centre. This was done solely for the easy movement of containers in the dock complex.

Simultaneously, the port authority expressed equal concern for the prevailing government policy. The newly independent nation-state faced famine and food crises many times during the 1950s. This experience induced the Nehruvian government to adopt the policy of

[30] Baldeo Sahai, *The Ports of India, op.cit.*

increasing the food production of the country, which we know as the 'Green Revolution.' Within a few years, India was capable of producing a sufficient quantity of food to meet the country's internal demands.

But how was this directly linked with the ports? And what about overseas shipping from the country? Since independence, the major ports of India, as their trade statistics indicate, traded mostly bulk cargo in which the foodstuffs occupied a considerable proportion. So, the port trusts' income was greatly generated by importing foodstuff cargoes. However, the Green Revolution significantly altered India's agricultural capacity, causing the ports to bear the brunt of these changes. However, as a supplementary policy to keep the balance, the Bombay Port began paying interest to import various things that were necessary for agricultural production, such as fertilisers.

The years between 1970 and 1980 were very crucial in the development of containerisation in Indian ports, as the period saw both the development of a strategy and implementation by the central government to facilitate container facilities in India. Many factors contributed to this process, including export promotion and the growth of the country's share in world maritime trade, but among the most significant was the intrusion of some US shipping lines in Indian ports. This period could be divided into two phases: the first one started at the beginning of 1970, when the government was thinking of increasing the capacity of maritime trade, such as the establishment of a committee of export promotion. After 1975, the government paid attention to the implementation of policies that could facilitate container shipping, like the establishment of the National Shipping Board.

In the 1970s, the Bombay Port Authority occasionally handled a small portion of containers, but these were not in considerable volume and were mixed with other break-bulk cargoes. Bombay Port did not have the capacity to support handling a large number of containers due to the unavailability of sufficient space for unloading containers in the docks and, to some extent, the paucity of equipment. However, the real impetus emerged in 1973 when American President Lines, a US-based container shipping company, visited Bombay Port during their return journey, gradually establishing Bombay as their primary port. This was probably the reason why, at the end of this decade, the government allotted a

considerable amount in the budget in the Fifth Five-Year Plan for procuring container handling equipment.

Bombay's pry to the evolving container shipping networks both in Asia and the world was entangled by several internal and external factors, with the year 1970 and its attendant events serving as a good starting point for discussion.[31] As we noted above this year, when the various trustees of the port paid tribute to the sudden death of M. A. Master, technological progress in shipping received top priority in their comments, in which Mr Master had notable contributions. It proves to the port authorities that technological changes in world shipping were the topmost priority. In this instance, Mr Kulkarni's comment is very relevant. He said, "Shri Master had certain convictions about the desirability of mechanisation and technological improvements…as a Trustee of the Bombay Port, he had made untiring efforts for bringing about the modernisation of the Port so as to *keep pace with* technological progress in oceanic transportation." (emphasis mine)[32] However, in spite of such consciousness, Bombay had to wait another five years for the real move to container shipping.

In the 1970s, three key factors influenced and governed the entire process of developing shipping facilities at Bombay Port: the decline of export promotion, regulation of foreign exchange, and interference from international development institutions. The policy of the national governments in Asia after the end of colonialism and the end of empire had a much bigger impact on the growth of international business in the Indian Ocean arena. India and other Asian nations adopted import substitution and paid much attention to the policy of self-reliance. Nations paid considerable capital into internal relief and were running various government-led programs to reduce poverty, and tried hard to reduce imports. But the boldest stick was how the funds of the central government could be used. While granting capital to the port trusts, New Delhi, in each budget, fixed a quota that could only be used for foreign exchange. This had a considerable impact on the growth of Bombay's

[31] MPAR/PV/Trustees Board Meeting held on 13th January 1970. For examples, in spite of several concerns, urges, and recommendations on container shipping facility found in the records of the trust before 1970, there is no mention of container shipping in the Audit Report of the Bombay Port Trust for the years, 1963-64 to 1967-68.
[32] Ibid.,p.1.

development in port facilities. As several official instances have been found where the trustees were struggling to cope with—and sometimes had to underestimate—development issues of the port in this bounded economic environment. On many occasions, the authority attempted to reduce the costs associated with foreign exchange transactions. One instance was the case of the tender for buying electric switch sockets that, through an order, was fixed with an indigenous company named Messrs. Siemens India Ltd. solely for the purpose of saving a total of Rs. 3,250 in foreign exchange.[33] Similarly, in the dock expansion schemes at the port, the tenders were mostly given to Indian companies with a supporting statement that "it did not involve any payment of foreign exchange."[34] Such an urge to defunct any remittance in foreign exchange often led to the delay of improvement works at the dock.[35]

The import substitution model adopted by the national governments in Asia, and India in particular, certainly impacted the foreign trade in developing nations. Until the 1970s, India imported a considerable amount of food through ports. For example, India imported 5.2 million tonnes of food grains in 1968-69. But the 'Green Revolution' made the national front relaxed by the fact that food imports in the subsequent years dropped rapidly. This was obviously a good thing for the nation, but paradoxically bad for the seaports, as they made huge income through this traffic. In Bombay Port, this figure accounted for only 1 million tonnes in 1970, down from 5.2 million tonnes in 1968-69, which was really a matter of concern to the authorities. Furthermore, the hope that the Green Revolution might fetch other complementary traffic earnings, like the imports of fertilisers, fertiliser raw materials, and farming tools, and the export of cash crops such as sugarcane and oilseeds, was also not "materialised," as in the preceding years existing stocks of fertilisers were not properly used and the poor growth rate of the fertiliser industries within the country.[36]

[33] MPAR/PV/Trustees Board Meeting held on 23th March, 1970, Purchase of Spares for wharf cranes, p. 545. Messrs. Jessop & Co. Ltd., Calcutta, an Indian government owned company was one of the suppliers of cranes in Indian ports.

[34] MPAR/PV/Trustees Board Meeting held on 10th February, 1970, 'Dock Expansion Scheme' memorandum from the Addl. Chief Engineer, No. HF 481B/46[7]/5567, p.159.

[35] Ibid., p.160. ("as Indian contractor will be in a position to execute the..work without any foreign exchange payment, it would be possible to construct the Small Boat Harbour at this site even at a later date…")

[36] MPAR/PV/Trustees Special Board Meeting held on 25th February, 1970, 'Revised Estimates, 1969-70 and Budget Estimates', 1970-71, p.358

This was explicitly portrayed in the "Actuals" of the Port Trust of the year 1968-69 as the continuous *imbalance* of trade.[37] And such a regular imbalance of trade, along with the loss in earnings from imports, motivated the port to pay attention to the export promotion. For example, in the draft of the Master Plan for the Bombay Port (1968), special emphasis was given to the port facilities, especially for the Sheva-Nhava scheme and oil berths. Out of 61.17 crores, more than 10 crores had been allotted for the oil berth. It is to be mentioned that the huge investment in the port was *justified* by four primary logics: growth in exports, technological changes, containerisation, and congestion in Bombay. In their own words,

> there is every hope of reversal of the present downward trend of traffic before long with further economic growth of the country and expansion of trade particularly in export. Moreover, the development of our port facilities is warranted not so much by the value of traffic …. but technological changes taking place in ship-building. Larger and larger vessels are being constructed… and unitisation, palletisation, and containerisation of loads are the order of the day. How can our Port maintain its pre-eminence and our country benefit from the economics of scale in maritime sector, if we are not equipped to handle bulk carriers and uniformly bulk loads?[38]

Loss in traffic and changes in the commodity composition since 1970 certainly induced the port trust to look into *modernisation* and development programs in the docks more seriously than before. As noted in the chairman's view, "the main justification for the development projects was not the dimension of the anticipated traffic, but the technological changes in maritime transportation and the changes in the pattern of traffic." This was the time when Bombay Port started paying interest to handle large-scale bulk carriers. This was thought of not from the maritime angle but from the point of national interest, as it could also mitigate the foreign exchanges.[39] For that, the port had developed some facilities, like investing 10 lakh rupees in the Alexandra Dock for handling bulk sulphur, rock phosphate, and fertilisers, and also made proposals to the government for installing higher capacity grab cranes. The port trust also made an extension of the Alexandra Dock basin, along with the

[37] The total traffic in the year 1968-69 was 16.40 million tonnes in which the import and export constituted 12.10 million tonnes and 4.30 million tonnes respectively.
[38] MPAR/PV/Trustees Special Board Meeting held on 25th February, 1970, 'Master Plan for the Port of Bombay'.
[39] MPAR/PV/Trustees Special Board Meeting held on 25th February, 1970, 'Development Plans', p.361.

plan of shifting some cranes from the existing berths, which were being used for handling food grains. The only purpose was to reduce the waiting time of the ships in the stream.[40]

The downward trend of foodgrain imports, which had been generating revenue for the port, had a significant impact on port policy, which in turn led to the consideration of export promotion. Since the beginning of the seventies, the Bombay Port has taken several steps to promote exports. One of them was the low wharfage rate (shipping charges). According to the data, Bombay Port used to charge wharfage of Rs. 2.50 per tonne for sugar exports, which was the lowest compared to all other major Indian ports. Furthermore, the free period for ships having import cargo was allotted to 4 days, while the same for export cargo was extended up to 10 days.[41] And such endeavours worked well promptly, as in the subsequent years the export trade of the port—particularly sugar, iron, and steel—was more stable than the imports.[42]

But more importantly, this was the time when, along with export promotion, the Port Trust started thinking about container shipping seriously. Here we find *two* contradictory stories. When the Master Plan for the Development of the Bombay Port was being prepared, along with a survey report by Consulting Engineers M/S. Bertlin & Partners, the main concern was how the docks with poor, outdated technology could handle the bulk cargoes to be transported in larger and standardised unit loads such as pallets and containers. In the Master Plan, it was boldly proposed to remodelexisting docks. But for the draft limitation issue, there was a little scope for remodelling of the existing docks in Bombay Port that were, according to the report, "handicapped by draft limitation and bottlenecks due to saturating traffic." This was the time when building a satellite port on the eastern side of the Bombay Harbour at the Nhava-Sheva area was started. Therefore, the consulting engineers M/S. Bertlin & Partners placed greater emphasis on export trade and suggested constructing three berths at the new satellite port at Nhava-Sheva, two for handling bulk cargo such as sulphur, sugar, fertilisers, etc., and one to be constructed

[40] MPAR/PV/Trustees Special Board Meeting held on 25th February, 1970, 'Dock Expansion Scheme', p.362. 11
[41] MPAR/PV/Trustees Special Board Meeting held on 21st July 1970,'Report of the Public Account Committee on the audit reports on the Bombay Port Trust Accounts for the year 1963-64 to 1967-68', p.1330.
[42] MPAR/PV/ Trustees Special Board Meeting held on 27th October, 1970, 'Administration Report, 1969-70', p.1882.

especially for handling containers.[43] While M/S. Bertlin & Partners was in favour of container shipping in Bombay Port; the other study team, named the International Association of Ports and Harbours (hereafter IAPH), was of the opposite opinion. Instead of investing huge capital in the new satellite port, they opined on the existing facilities of the Bombay Port and thought that the government should invest the capital by considering current trends of the traffic through the port. In their words,

> We do not agree with the planning logic which suggests that a new port should provide every conceivable type of port, facility within one concentrated area…To plan for so many diverse facilities is overly me ambitious and overlooks the existing resource of the port.[44]

IAPH's logic was entirely based on the trends in the commodity composition of India's export and import trade. IAPH was entirely in favour of the opinion that the investment for a new satellite port could only be economically justified if there was any future possibility of upward trends in the imports of food grains through Bombay.[45]

Table no 3.1, Multimodal Cargo Transportation at the Bombay Port

YEAR	IMPORT/EXPORT	TYPES OF CARGO	NUMBER	WEIGHT (tonnes)
1969-70	Import	Pallet	8719	8948
1969-70	Import	Container	33	106
1969-70	Export	Container	--	577

Source: MPAR/PV/ Trustees Special Board Meeting held on 27th October, 1970, 'Administration Report, 1969-70', pp.1882-1883.

However, the Government of India accepted the earlier recommendation made by M/S. Bertlin & Partners, who gave much emphasis on creating a satellite port. This is evidenced by the fact that in 1969 the government/Ministry of Transport took up the issue

[43] MPAR/PV/ Trustees Special Board Meeting held on 21st July, 1970, 'Future Development of Bombay Port'..
[44] Ibid.
[45] Ibid.

of land acquisition with the Maharashtra government, and the state government soon after initiated steps to allot large-scale land for the newly proposed port complex.[46] Also, it is to be mentioned that this was the time when both the frequency and tonnes of unitised cargo, such as pallets and containers, were considerably increasing in the port, in which the export index of containers was much higher than the imports. That was probably the prime reason that induced the port to ply into the newly proposed satellite port at Nhava-Sheva with the purpose of handling the upward trends of bulk cargo and containers. Although at that time the containers were shipped and brought by conventional vessels as deck cargo.[47] And as the plan for the new satellite port was still in process, the port authority made some temporary arrangements for shipment of unitised cargo, like creating a container assembly depot at Timber Ponds and pre-shipment storage facilities. These had been done for the sake of shippers' interests to reduce the extra expenditure incurred on handling and to promote exports.[48]

Despite considerable attention from the port trust, the modernisation of the Port of Bombay did not succeed in garnering proper and serious concern from the national government. Both the existing dock (Alexandra Dock, which was proposed to be equipped with container facilities) and the newly proposed scheme of Nhava-Sheva as a satellite port to handle container cargo were still not in the limelight of discussion of the policy makers of the nation. At the beginning of 1971, the port was still waiting for the final report of the Central Government regarding the containerisation of the docks.[49] Along with the constraint of government funding, the port throughout this year regularly witnessed downward trends in traffic, not only of commodities such as food grains but also of

[46] MPAR/PV/ Trustees Board Meeting held on 8th September, 1970, T.R. No. 1105, Memorandum from the Addl. Chief Engineer, No. CF-344[HF-48 MP]/138 dated 30th April 1970, 'Extension of Bombay Port Limit', p.1624. (Vide Letter NO. 8-PDI (96)/67, dated 24th February 1969).
[47] MPAR/PV/ Trustees Special Board Meeting held on 27th October, 1970, 'Administration Report, 1969-70'.
[48] Ibid..
[49] MPAR/PV/Trustees Board Meeting held on 26th February, 1971, p.287. Paucity of finding further reduced the number of cranes at the dock from time to time.

overseas passenger traffic.[50] The decline of traffic—both import and export—resulted in a fall in income of the port from wharfage charges.[51]

Table no. 3.2, Multimodal Cargo Transportation at the Bombay Port, 1970-71

Type	*Export/Import*	*Tonnage*	*Number*
Pallet	Import	15,799	14,419
Pallet	Export	3,336	2,433
Container	Import	796	117
Container	Export	869	179

Source: MPAR/PV/Trustees Special Board Meeting held on 26th October, 1971, Administration Report, 1970-71, p.781.

Perhaps this was the time that pushed the Bombay Port to look into modernisation, especially for handling *unitised* cargo. During 1970-71, the Bombay Port experienced a progressive increase in the traffic of pallets and containers, despite a shortfall in food grain traffic. As the table shows, there was an increase in container traffic for both imports and exports, with exports comprising a larger portion. But the government was still considering the proposal for the Nhava-Sheva project to establish a full-fledged container berth. As an interim measure, the Bombay Port decided to develop a berth (12B) equipped with modern facilities to handle container traffic. [52] Furthermore, in the years following the war with Pakistan, the port's export trade rapidly increased, while the import trade of certain commodities declined due to advancements in the country's agricultural and industrial production. For example, the export increased to 15.3%. So, to balance the loss of earnings from import trade, the Bombay Port started paying attention to handling containerised cargo

[50]Ibid., 'Ballard Pier Extension Scheme', p. 288. Passenger traffic declined because of the long closer of the Suez Canal. However, some items of export such as exports of oil-cakes, iron and steel had upward trends.

[51] Ibid., 'Budget Estimate, 1971-72- Traffic', p 294; also, in MPAR/PV/ Trustees Special Board Meeting held on 26th October, 1971, Administration Report, 1970-71, p.784. However, at the end of the year overall traffic of the port increased a bit, and in between, some remedial strategies such as revision of surcharge on shipping and demurrage rate imposed by the port authority resulted in the growth of port's revenue surplus which in turn helped the authority to sustain their development works.

[52] MPAR/PV/Trustees Special Board Meeting held on 26th October, 1971, 'Administration Report', p. 781.

and bulk commodities.[53] However, some early measures were already taken from the government side as well as the port trust to fulfil the aim, which included setting up a Unit Load Advisory Committee by the Port in June 1967 and conducting a seminar on containerisation held in December 1968.[54]

The delay in government approval for investing in the containerisation project at Bombay Port induced foreign shipping companies to take part in this process. Since the beginning of the year, a foreign shipping line called American President Line expressed interest and agreed to invest in the port to develop container handling facilities, enabling them to participate in containerised cargo trade. The total cost was 71.7 lakhs (excluding customs). Their proposal was approved by the Port Trust[55] with the view that it would enable this port to promote containerisation without having to risk a heavy investment, particularly in the initial development stage of the new technique in this country."[56] However, their endeavour did not get sufficient support from the government; their proposal to waive customs fees for importing such equipment at the port was not approved by the government. Another potential obstacle was the government's support for national shipping lines. The government was not in a position to allow a foreign shipping line to invest in the port, and it wanted to know more about the voices from some prominent national shipping lines, whether it could hamper their interest. The responses the government received from them were varied. Some companies, such as SCI, were initially willing to participate but later changed their opinion.[57] The Managing Director of SCI, in a

[53] MPAR/PV/Trustees Special Board Meeting held on 22th February 1972, [Extract from proceedings of a meeting of the Finance & General Committee] 'Revised Estimates, 1971-72, and Budget Estimates, 1972-73', p.321. The attitude of the National Government and Port Trust was quite different on containerisation. For instance, the Government did not approve to waive off the customs fees for importing container handling equipment by a foreign shipping line, whereas the port trust finally decided to pay the whole amount of customs which was 18.98 lakh rupees.

[54] MPAR/PV/Trustees Board Meeting held on 30TH January 1973, Memorandum from the Additional Chief Engineer, No. HF.481C/1/688 dated 15th November, p.303.

[55] Ibid., (TR NO. 602, 1st June 1971)

[56] Ibid.

[57] MPAR/PV/Trustees Special Board Meeting held on 26th October 1971, 'Administration Report', 1970-71', p781.

letter, opined that the proposal made by APL on containerisation would only be useful for their shipping service and not benefit other Indian shipping lines.[58]

Quite the same opinion was made by the MD of Scindia Steam Navigation Company.[59] Perhaps these impacted the APL's interest in Indian containerisation, as within a year, in September 1972, the APL had finally withdrawn its plan/offer on investing in containerisation at Bombay Port.[60] When APL expressed their interest in containerisation, it was decided then to convert some traditional cargo vessels into full-fledged container ships. But as their offer got defunct, the proposed plan of handling containers at Bombay Port had been changed, and by this time, some alternative measures were taken, like handling container cargo by vessels having gear facilities named Searacer" -type vessels, which had the capacity to carry 450 containers, and *mariners,* which had the capacity to handle 198 containers. In some of the vessels mentioned, shore-side facilities for handling container equipment were not needed. Parallel to handling containers, these vessels were also used to handle break-bulk cargo.[61]

Day by day, the urge for container shipping was increasing proportionately. Due to the deficiency of rainfall, the overall country's agricultural production declined, and as a result, India did not meet the target to reach the goal of increasing agricultural production by 5% per annum, which was fixed in the Fourth Five-Year Plan. This had also affected the national income. The import of food grains in considerable quantities further deteriorated the trade balance of the country, which in turn created a stimulus in ports for paying attention to handling containerised cargo along with deep-draughted vessels. In maritime shipping, an estimate of 4 million GRT was fixed to be achieved in the Fifth Plan.[62] Furthermore, the port trust administration was trying its best to include the Nhava-Sheva

[58] Letter No. 213/DD/101/177 dated 9th/13th September 1972.

[59] It is to remember that Scindia was one of the largest indigenous shipping companies in India emerged from the Swadeshi spirit in the days of British imperialism.

[60] MPAR/PV/Trustees Board Meeting held on 30TH January 1973, Memorandum from the Additional Chief Engineer, No. HF.481C/1/688 dated 15th November.

[61] MPAR/PV/Trustees Board Meeting held on 30TH January 1973, D.O Letter NMM dated 8th September 1972 from N. M. Mehta of the Forbes Forbes Campbell & Co. Ltd., to the Chairman of the Bombay Port Trust.

[62] MPAR/PV/Trustees Special Board Meeting held on 22th February 1972, [Extract from proceedings of a meeting of the Finance & General Committee] 'Revised Estimates, 1972-73, and Budget Estimates, 1973-74'.

scheme (in which a special berth was sanctioned for container cargo) in the coming Fifth Five-Year Plan with the hope that the central government would allot the estimated cost in the budget. Here we find two strong pieces of evidence. First, the Chairman expressed his bold view in support of the Nhava-Sheva.[63] Also, the memorandum of the Chief Engineer of the port trust could be counted here as noteworthy. He had raised many *economic justifications* for embarking on the project. Firstly, he had demonstrated the traffic forecast of the Nhava-Sheva, in which the container cargo to be occupied was estimated to be approx. 0.67 million tonnes.[64] And then he went to the "economic viability" of the project, considering three variables—reduction in freight in handling large bulk carriers, turnaround time of ships, and reduction in waiting cost—all culminating in an overall 17.76 crore savings and a 16.94% rate of return to the national economy.[65] One of the important points the chief engineer raised was how it could save the foreign exchange of the country. He mentioned:

> The scheme of Nhava-Sheva is principally envisaged as one where large bulk carriers of 65,000 to 80,000 dwt. drawing water upto 13 meters would be accommodated. A container berth with large back-up area is also provided as it is anticipated that a large quantum of traffic in the next decade is likely to be handled in containers. The scheme of construction of ports has a large gestation period and, therefore, it is necessary to embark on such project well in advance, so that the facilities are available at a time when they are most needed.[66]

For example, the Chief Engineer mentioned the overall picture of food grain traffic, which was increasing again this year due to low rainfall, and then went on to show how the investment in the port could promote national savings. During the year 1973, the Bombay Port handled more than 6 lakh tonnes of food grains, for which about Rs. 50 lakh had to be

[63] How the Bombay Port Authority was radical on modernisation and container shipping in the 1970s could be justified with a fact that when a news was circulated in media that the Central Government was not in a position to grant the Nhava-Sheva project in the coming budget, the Chairman called a special meeting to discuss the matter immediately and shed light on the views of six organisations (All India Manufacturers' Organisation, Indian Chamber of Commerce, Bombay Chamber of Commerce, Indian National Ship-owners Association, Karmahom Conference, All India Exporters and Importers Associations)who had strongly urged the Government of India on why the Nhava-Sheva project was economically viable and should be included in Fifth Plan. The Chairman also decided to take this issue as a regular agenda in their upcoming meeting.

[64] Although not a great quantity but considerably high in proportion to other commodities.

[65] MPAR/PV/Trustees Special Board Meeting held on 23rd August 1973, Memorandum from the Chief Engineer, No. CE/HF-535/9/582 dated 30th.

[66] *Ibid.*

paid for demurrage and unloading charges. This whole amount could be waived/saved if there were available berths having adequate depth for handling large-scale bulk cargo.[67]

But perhaps the most noticeable concern towards containerisation and development of Nhava-Sheva came from the side of the All India Manufacturers' Organisation. By a detailed memorandum, this organisation made it clear that, for the national interest, the Nhava-Sheva should be given the "highest priority" for inclusion in the Fifth Plan. The five points they raised include the issue of the increasing size of the ships that the Bombay Port was handling. Due to the draft limitation, the Indira Dock (erstwhile Alexandra Dock) was not able to handle ships (dry cargo) more than 22,000 dwt. Second, in the coming days, according to the Planning Commission, the Port of Bombay had to handle more than 12.6 million tonnes of dry cargo, which was approx. 4 million tonnes greater than the present capacity of the port. Third, due to the growing export traffic and limited port handling capacity, the waiting time of ships and especially berth occupancy were getting longer periods, sometimes up to 97%, which in turn slowed down the maintenance works in the docks and further deteriorated the foreign trade of the port.[68] Fourth, due to the lack of space and congestion in the city of Bombay, it was not possible to construct a container berth. They noted:

> The containerisation movement is the vogue of shipping. Owing to lack of back up space, and the congestion on the roads in the City, it is not possible to construct a container berth at the present Port. Similarly…it is not feasible to have fully mechanised unloading equipment which results in inordinate delays in clearance of large cargoes…. the Bombay Port can handle (bulk cargoes) at the rate of 600 to 800 tonnes per day. At Nhava-Sheva the capacity of loading and unloading plant for fertilisers and raw materials is planned at 1,000 to 1,500 tonnes per hour. Thus, a ship of the size of 22,000 dwt, which takes about 25 to 30 days for unloading at the Bombay Port, can be unloaded in one day at Nhava Sheva.[69]

However, this organisation raised another important reason: to increase the call of the foreign ships in the shipyards for repair facilities, which could boost foreign earnings for

[67] *Ibid.*
[68] MPAR/PV/Trustees Special Board Meeting held on 23rd August 1973, Copy of Memorandum dated 19th July from the All-India Manufacturers' Organisation.
[69] *Ibid.*

the country. This was the thing that the Singapore Port was doing at that time.[70] The organisation further stressed the capacity of the Bombay Port that was deteriorating[71] and was unable to capture the growing trade and commerce of western India; thus, improvement of the same was treated by them as a "necessary instrument" for achieving the policy of "self-reliance" of the nation. They strongly urged the Planning Commission to include the project in the budget, saying, "Implementation of the Nhava-Sheva Project does not brook even a day's delay."[72]

Not only port-related interest groups or business organisations, but also the Maharashtra government strongly expressed their views in support of the Nhava-Sheva project.[73] On the occasion of the Centenary Celebration of the Bombay Port Trust on 26th June 1973, V.P. Naik, the then CM of Maharashtra, expressed the view that the Central Government should give top-most priority to this project and should include it in the Fifth Five-Year Plan not only for the development of Bombay Port but also for the interest of the overall Indian economy.[74]

Thus, not only the port authority but almost every interest group, including various associations, chambers of commerce, importers, exporters, and manufacturers who were associated with the Port of Bombay, was vocal in support of the economic feasibility of the newly proposed Nhava-Sheva scheme as well as modernisation of the port facilities and made utmost efforts to include it in the Fifth Five-Year Plan. However, in reality, all these efforts did not work well. In the draft plan, the planning commission did not include the Nhava-Sheva scheme. Even the Central Government is pruning down many other

[70] *Ibid.*, p.270.

[71] 121, Concern of the several interest groups and import/export organisations associated with Bombay Port on port modernisation could be justified further by the fact that this was the time when the various Shipping Lines/conferences operating at Bombay Port started increasing the surcharge on cargoes due to the continuous port congestion in which the India-UK Continent was on the top. At the end of the 1973 it was 10%, then revised by 20%, and finally reached to 50%, followed by the India-USA route which increased its surcharge by 25%. Port congestion was probably the prime reason for which a conference line named Karmahom Conference was planning to by-pass the Bombay Port.

[72] *Ibid.*

[73] The Maharashtra Government Land Department had been working on well regarding the issue of land acquisition process to accelerate the Nhava-Sheva project.

[74] MPAR/PV/Trustees Special Board Meeting held on 23rd August 1973, p.268.

provisions made by the Port Authority for development works. For example, for the spillover schemes, the government approved Rs. 7 crores against Rs. 10.65 crores recommended by the port authority. Similarly, for new projects, the port made provision for Rs. 34.96 crores, but the government approved Rs. 31.90 crores.[75] This cut down of the budget of the National Government left a remarkable repercussion on the Bombay Port Authority. From this time, they began to raise their voices politically[76]. In one of the trustees' words:

> The Port Trust Board should tell the Government of India quite frankly that the construction of a satellite port at Nhava-Sheva should not be looked at from a political angle or from the angle of pressure by people in Delhi. The issue should be examined on its merits and a pragmatic view should be taken on the need for a satellite port at Nhava-Sheva. The neighbouring countries are putting up large ship buildings and ship- repairing yards and also improving their docks and berthing facilities. Large ships cannot make use of the Bombay Port Trust docks and unless a modern port… large size ships will not call at the Port of Bombay.[77] (emphasis mine)

It is to point out that the urge for the modernisation of the port was also connected with the growing port facilities of the neighbouring Indian countries, which reflected the trends of the growth of national shipping lines in the post-war developing world. Therefore, to the authority, a satellite port will not only boost trade and commerce of the nation but also play a major role in the growth of national shipping.[78] The authority was more concerned about the reopening of the Suez Canal and its effects on the Port of Bombay. Dr Patel had justified and mentioned it in detail as follows:

> Suez Canal is going to be re-opened and re-opening of the canal is of vital importance to the Port of Bombay…it is essential that the Port should be equipped to handle the modern ships that would be using the Suez Canal. If the Port of Bombay cannot cater to the needs of the modern ships, then its importance would be considerably reduced and the modern ships using the Suez Canal will by-pass the

[75] MPAR/PV/Trustees Special Board Meeting held on 9th July 1974, Memorandum from the Chief Engineer, No. CE[Monitoring]/V/2 dated the 21st June, 'Draft Fifth Five-Year Plan', p.55.

[76] *Ibid.*, p. 59. It is because at the same time, the other Indian ports were receiving financial grants from the Central Government for development. One trustees even lamented, "*what crime the Port of Bombay had committed that it should be penalised and that funds should not be made available to it for the modernisation of the Port*",

[77] MPAR/PV/Trustees Special Board Meeting held on 22nd October 1974, 'Administration Report, 1973-74'.

[78] We have already mentioned about what happened on the proposal of APL a foreign shipping company interested in investing on the containerisation/modernisation of the Bombay Port.

> Port of Bombay… the present Port is not quite suitable for handling modern ships and in this context the development of Nhava/Sheva is a prime necessity in the interest of the entire Indian nation.[79]

If all the efforts and being vocal for modernisation of port facilities did not work well for getting approval from the national government until 1975, the subsequent five years saw a very progressive scenario that differed greatly from previous eras in terms of the government's -approach. This is evident with some surveys and feasibility reports conducted by the national government in the mid-seventies with an aim to increase the potential of exports of the country as well as keep pace with the technological changes in global shipping. Although the national government did not approve the Nhava-Sheva project in the five-year plan, the authorities of the Bombay Port were still vocal in making their voice heard in support of the project and paid tremendous efforts for the same. From a materialistic viewpoint, this was feasible because in the 1970s the port handled more than half of the total overseas trade of India, thus contributing to the nation's economic growth. And such a major volume of traffic, as one of the trustees of the port assumed, could *place* the Bombay Port as "one of the three major ports of the world."[80] In spite of the lack of funding and attention from the national government towards port modernisation, the Bombay Port continuously paid attention to improving its facilities to handle the export cargo, more specifically the *unitised* cargo.

3.3 Congestion in the Docks

One of the major problems with Indian shipping in post-independence India was the congestion of major ports' docks. This problem frequently surfaced not only in nearly every major Indian port but also in other significant international ports. However, in India, the Bombay Port was at the top of the list. During the annual general meeting, Mr. A. D. Finney, who was the president of the Bombay Chamber of Commerce, expressed his concerns:

[79] MPAR/PV/Trustees Special Board Meeting held on 9th July 1974, 'Draft Five-Year Plan'.
[80] MPAR/PV/Trustees Special Board Meeting held on 25th October 1977, 'Administration Report', 1976-77, p. 649.

> Although the port congestion in Bombay has been freely ventilated in the Press and discussed by Chambers of Commerce, industrialists, and Government Officials until the subject is threadbare, I make no apology for introducing it here. The rapid loading and unloading of ships, and the prompt clearance and dispatch of goods is so important to the commercial life of Bombay and this trouble has been so prominent a feature of our year of office that a speech of this kind would be incomplete if no reference is made to it. I would like to say that Bombay is not the only port where shipping meets with serious delays. In fact, I could name two regions in which the situation is or has been worse than in Bombay, namely, the East African Coast and South America. Even so, all who take a pride in this city should maintain unceasingly their efforts to improve the situation.[81]

The congestion problem was not only affecting the workings of the port, but it also had a deeper impact on the overall import-export maritime traffic of the country. Delays in clearing goods in the docks resulted in extra demurrage charges on shipping lines imposed by the Port Trust, which further increased the freight cost. And the same thing was happening in the port of Bombay. Throughout the entire decade after independence, Bombay Port could not clear the goods on the docks in time. There were several reasons behind that. The first was related to internal transport deficiencies—the inefficiency of rail-sea transport coordination. The Indian railway was unable to provide enough empty wagons to transport goods from the docks to their destinations in the interior of the country. The second problem was related to the country's ability to supply a considerable portion of energy resources, particularly fuel. Lack of getting sufficient oil from the government deteriorated the works of mobile cranes and clearing agents, which had a very drastic impact on the condition of the docks. The third major problem came from the dockworkers. Throughout the entire 1950s and 1960s, Indian ports faced massive protests, agitations, and strikes from various labour unions. The city of Bombay also faced such a problem. Other factors were also there, like the lack of sufficient storage or warehousing facilities in the Bombay port. All these heavily impacted the port traffic as well as the import trade of the port. The intensity of congestion in Bombay port sometimes reached such a level that many foreign shipping lines that traded with the port imposed an extra surcharge. The same ended with the American steamer agents, who started imposing a 25% emergency surcharge on the cargoes shipped to Bombay from the year 1948 until the condition would be normal. The

[81] Bombay Chamber of Commerce, Committee Report, 1948, p. xxvii.

UK and Continental lines did the same in the month of July 1949.[82] As a result, many trading organisations, shippers, and importers based in Bombay protested and sometimes made petitions to the government, demanding that the situation normal for better trading practices.[83]

However, steps and measures were often taken from the side of the government as well as port authorities to prevent port congestion, which included the diversion of the grain ships to other ports and the auctioning of the goods in the docks that had been uncleared for the last two months by the agents/consignees. A series of innovative measures were taken in the decade of the 1950s by the port authorities and government to make the port free from congestion. Sometimes, a special scheme for dock labour had been introduced to pay them an extra allowance with a view to expediting the works.[84] Such endeavours worked well. This is evident by the fact that by December 1949, almost every foreign shipping line had withdrawn its imposed extra surcharge.[85] But some of the most innovative steps to save the port from a serious congestion issue came to be implemented in 1955 when a large amount of iron and steel unexpectedly came to the Bombay Port as an import cargo, which deteriorated the situation even further. These include speeding up the process of cargo delivery to the parties, establishment of storage areas, simplification of customs procedures, and bringing some upgraded handling equipment to the docks. Such strategies successfully bypassed the congestion problem and increased the port's performance, as is evidenced by the fact that the port handled an additional 2.39 lakh tonnes of cargo in the next year. It is noteworthy that this feat was attained during a period of sustained low labour productivity at the Bombay docks.[86]

3.4 Problem of Pilferage

[82] BCCI, Committee Report, 1949, p. xxvii.
[83] BCCI, Committee Report, 1948, 'Congestion in the Docks', pp.130-31. It is to mention that problem of port congestion was not always associated with the port of Bombay. Many other foreign ports faced such problem, this was especially true with the case of the ports of East African Coast and South America.
[84] *Ibid*, pp. xxvii-xxviii.
[85] BCCI, Committee Report, 1949, p. xxvii.
[86] KPTMA, 'Indian Ports and Overseas Shipping' by R. L. Gupta, *Calcutta Port Annual*, Published by Commissioners for the Port of Calcutta, 1958, p.43.

Another problem that the port trust authority, shipping companies, chambers of commerce, importers, and exporters faced during the early years after independence was the inability of the police force to protect the docks. Docks have witnessed numerous instances of pilferage since 1947. This was the time when many unauthorised individuals from various backgrounds, primarily refugees, sought shelter in the docks, complicating the police's efforts to maintain law and order and ensure vigilance. To make the situation normal, both the port authorities and other interest groups associated with shipping made proposals to the government from time to time and tried to find a better way to solve such problems[87]

3.5 Regional Port Development

Historically, India's west coast had a deep connection with the western Indian Ocean and Arabian Sea through maritime trade and shipping. This interaction made the coast home to some of the major and minor seaports of India and the Indian Ocean from ancient times to the present. Before independence, India's trade relations were restricted only to British colonies, but after independence, these trading relations expanded to almost every corner of the world. This had impacted the maritime trade of the West Coast also. This is evident with the continuing rise of congestion in Bombay docks since the days of independence. As a result, both the government and non-government agencies that were associated with the business of shipping tried to improve the shipping facilities of other regional ports. In 1946, such an endeavour was seen from the side of the Government of Bombay. Karwar was such a port on the west coast, which received most attention from both the government and other interest groups. Its natural harbour and good connectivity by road would probably be the reasons for it receiving topmost attention. The continuing rise of trade and shipping in Bombay Port and the tremendous congestion problems in the docks might have induced the authority and the government to develop the other minor ports[88] so that the overwhelming burden that Bombay Port was facing could be mitigated.[89]

[87] BCCI, Committee Report, 1948, 'Bombay Port Pilferage Committee', p. xxvii -133.
[88] BCCI, Committee Report, 1947, 'Development of Minor Ports in the Province of Bombay', p. 120.
[89] BCCI, Committee Report, 1959, 'Rebate in Freight Rates in Respect of Exports Through the Port of Kandla', p. 247 Occasionally, the government implemented measures to promote the nation's export trade via the west coast

3.6 Warehouse Development

In the meantime, however, with the paucity of funds and loss of earnings due to congestion problems, the port authority made some important steps to improve the capacity and performance of the shipping service. One of them was the endeavour to build a refrigerated bonded warehouse in the docks. There were three main purposes of such thinking. This might allow shipping companies in Bombay to maintain a stock of fresh foods for shipment as needed. Secondly, the provision of a warehouse equipped with refrigeration facilities could enhance the export of Indian fresh produce, such as fruits, to international markets. Third, it could assist in maintaining the medicine and vaccination in a secure location for an extended duration. Undoubtedly, it would certainly alleviate the strain of products in the transit sheds. For the promotion of its usage, the port authority devised a strategy to provide a flexible customs procedure.[90]

3.7 BCCI and the Bombay Dockyard

However, upgrading Bombay's maritime sector was given the highest priority and received constant attention from the city's business firms. In colonial India, business firms, especially the Chambers of Commerce, had played a very crucial role in trade and commerce. Since the first half of the twentieth century, business communities, importers, and exporters in Indian port cities such as Calcutta and Bombay have formed associations to achieve quotas in favour of their interests from the government. After independence, such firms also played a major role not only in business and trade but also in developing infrastructure and affecting governmental policies as well. Most of the major port trusts had representatives/members from the Chambers of Commerce along with other firms who are/were instrumental in many matters relating to shipping, trade, investment, customs, and policies for business communities. During the early days of the container period in Bombay, the Bombay Chamber of Commerce (BCCI), along with other agendas, played a pioneering role in promoting containerisation in Bombay port. In 1967, even when the port trust authorities of

ports by providing additional incentives. For instance, at the port of Kandla, the government provided a 25% rebate on freight rates exclusively for exporters utilizing this port for their shipments.

[90] BCCI, Committee Report, 1948, 'Refrigerated Bonded Warehouse', p.135.

Bombay itself were not in a position to think about container shipping, the BCCI prepared an extensive report/agenda on why containerisation was crucial in international business and how it could be implemented in Indian ports and shipping.

Along with other activities, the BCCI has played a vital role in the port since the early days of independence. As we said, the Bombay port's main issue was dock congestion. This congestion problem deteriorated the working of the port and increased the freight charges of many major foreign shipping lines further. This was a concern to the business communities, importers, and clearing agents of the city. Since 1947/48, the BCCI has paid considerable attention to this problem. As not getting enough fuel was one of the reasons, at first, the Chamber made a proposal to the government that an extra quota of oil/fuel should be allotted to both the port trust and clearing agents so that the intensity of congestion of the docks could be decreased. Perhaps because of the active protest and petition made by the Chamber (along with other interest groups), the central government deputed Mr Y.N. Sukhthankar, the then secretary to the Ministry of Transport, to examine the problem. He examined this and discussed it with several interest groups, including the BCCI. The result was the extra quotas of oil allotted to the port trust and clearing agents from the government. Again, during the time of increased imports in the port, the chamber had a decisive role in finding ways for the matter to be solved. In 1947, the dock manager for the above issue called for a meeting. Mr C.J. Damala and Mr J.H. Smyth represented the side of the chamber and made two important proposals: needing more covered warehouses in the port and deepening the two major docks so that a number of large steamers could be handled.[91]

The BCCI occasionally engages in resolving numerous issues, seeking more effective solutions in collaboration with the port authorities, beyond shipping and economic affairs. This was explicitly the situation with the pilferage issue that emerged at the onset of independence. Due to the rise in thefts at the docks, BCCI communicated with the Home Department of the Government of Bombay, emphasising the urgent necessity to augment the police presence for adequate surveillance. The BCCI proposed appropriate and feasible

[91] BCCI, Committee Report, 1948, 'Congestion in the Docks', pp.130-31.

recommendations about the "Pass systems," a scheme that had yet to be implemented by the Bombay Port. The BCCI designed the system to issue a paper-based pass exclusively to authorised individuals for entry into the dock complex. Upon the port authority's request for the BCCI's perspective on the matter, the BCCI conducted an internal survey and advised the authority against implementing the system, citing that it could elevate expenditures by over two lakhs annually, a sum disproportionate to the potential outcomes of the scheme. Instead, the chamber devised an innovative concept. The committee requested an augmentation of the police force and recommended the implementation of a specialised "dock allowance" for personnel to enhance the quality and intensity of surveillance.[92]

In later years, BCCI continued to pay serious attention to labour matters. In the 1950s, when government control over the country's trade became so rigid in nature and the prices of India's export commodities, such as oilseeds, were continuously increasing in the world market that it hard to compete with other international competitors in global demand, the Chamber issued a warrant to the port authorities about the labour matter. The Chamber emphasised that labour plays a vital role in shipping costs, particularly during ship handling, loading, and unloading processes. Therefore, any disruption caused by the labourers may further deteriorate the situation. Therefore, the Chamber advised the port trust to ensure full service from the labour side.[93]

Since the 1950s, almost all major Indian ports have been facing serious labour problems. These include strikes, unrest, and most notably the go-slow policy adopted by the then - labour unions. Bombay was not the exception. Throughout this entire decade, the dock labour in the port of Bombay showed such agitations to the authority, and in the 1950s, it reached such a level that the labour problem drastically affected the overall efficiency and output of the port, especially due to the shortage of winchmen. This problem further

[92] BCCI, Committee Report, 1948, 'Introduction of a "Pass" System for the Admission into the Port Trust Docks', p.134

[93] BCCI, Annual Report, 1948, 'West Coast Major Port Development Committee', pp.140-41, This committee for the development of regional ports of west coast under the Chairmanship of Mr. Kasturibhai Lalbhai, and consisted of representatives from various sectors like Bombay Railway, Calcutta Port Commissioners, Scindia Steam Navigations, Navy and others. It is to mention that the sole urge for developing the ports of the western coast was only to handle large-size merchant ships.

stimulated congestion at the docks. This situation got serious attention from the BCCI. On 20th May 1954, the chamber informed the Chairman of the Bombay Port Trust about the whole matter and urged an urgent meeting to solve the problem, all for the sake of the business communities and other interest groups associated with shipping. It was the endeavours of the chamber that the dock manager of the port called a meeting of the shipping interests within a week, and the whole matter was reported to the Ministry of Transport by telephone. Following the correspondence, the then Chief Labour Commissioner, Mr S.C. Joshi, visited the port and successfully resolved the issue.

Consequently, they abandoned the go-slow policy by the 30th of May, restoring the port to its normal working condition. [94] In later years, the BCCI continued to pay serious attention to labour matters. In the 1950s, when government control over the country's trade became so rigid in nature and the prices of India's export commodities, such as oilseeds, were continuously increasing in the world market that it hard to compete with other international competitors in global demand, the Chamber issued a warrant to the port authorities about the labour matter. The Chamber emphasised that labour plays a vital role in the cost of shipping, particularly during the handling of ships and the loading and unloading processes. Therefore, any disruption caused by the labourers may further deteriorate the situation. Therefore, the Chamber advised the port trust to ensure full service from the labour side.[95]

The 1960s were the decade when major Indian ports started paying attention to handling large-scale bulk cargo ships. In this period, Bombay port first introduced tanker service. So, to cope with both the emerging trends of world seaborne ships and the rise of export trade, the port of Bombay started paying attention to developing its infrastructure. The decade-long experience of having trouble with the frequent occurrence of congestions in the Bombay docks and labour unrest forced the port authority to develop some of its docks that had become obsolete. But the trust's wish to improve its facilities always tended to encounter resistance from the government side, especially when it was related to funding.

[94] BCCI, Committee Report, 1954, 'Labour Situation in the Port of Bombay', p.167.
[95] BCCI, Committee Report, 1949, 'Congestion in the Docks', pp.xxvi-xxviii.

The national government's policy of import control and mitigating foreign currency spending was such an obstacle for the nation's maritime development in the fifties and sixties. The immediate outcome was the adaptation of alternative strategies by the port. The "Minimum Scheme" was such a strategy. Using this strategy, the port trust selected specific development projects from the broader development plan and prioritised them to secure funding from the government. The case of the Minimum Scheme of the Bombay Port Trust in the Third Five-Year Plan can be cited here.

The chief motive of that scheme was to develop two outdated and obsolete docks, named Prince's and Victoria Docks. This was a part of the larger development program at an estimated cost of 13.15 crores.[96] But when the time came to incorporate it into the Third Five-Year Plan, disputes and opposition happened from the government side. Again, like other matters of port development, the BCCI played a very vital role in it, at least as far as its actions are concerned. In a letter dated 24th June 1959, the BCCI wrote to the Chairman of the National Harbour Board, Government of India, as follows:

> The foreign exchange shortage with the resulting curtailment of imports is likely to be a feature of the Indian economy for the whole of the third, and most likely, the fourth Five-Year Plan; but while these conditions may prevail in Bombay, the international development in the size of ships and the speed of their travel may well be considered in the same period…….if action is not taken in the near feature it will be found- to late- that the docks are obsolete and unable to cope satisfactorily with the ships which will be one the seas at that time. [97]

The above statement of the chamber not only illustrates how non-governmental agencies have been instrumental in the country's maritime sector since the 1960s, but it also highlights the growing divergence between the interests of Indian Port Trusts and those of international shipping interest groups, which are increasingly clashing with government policy. Furthermore, as far as the letter is concerned, the Chamber had a long-term vision regarding port development of the country, whether the import-export trade of the port in the coming years would rise or fall. Whether the recommendations worked well or not, the

[96] BCCI, Committee Report, 1959, 'Development of the Port of Bombay: The Minimum Scheme and the Third Five-Year Plan', p.245.
[97] *Ibid.*, p. 246.

government was of the opinion that the Port Trust should arrange its own source of funding—mostly international—for its own development. [98]

But BCCI's role was not always confined to port and shipping; it also contributed to the national government's import policy and foreign earnings. It is perfectly concerned with oil. If primary commodities such as grain dominated the trade in the first two decades of the post-1945 world, oil and petroleum products dominated the world trade and occupied a larger share in the last three decades of the twentieth century. Since 1960, the share of oil in developing world trade has gradually increased. The immediate effect was the frequent movement of oil tankers in the Indian Ocean.[99] However, the port of Bombay was neither ready to handle oil tankers of large size (more than 500 ft.) nor had the facilities to repair them. During this period, the BCCI emphasised the critical need to develop facilities for handling and repairing oil tankers. According to the Chamber, making facilities available for tanker repairing in the port would create ways to earn foreign currency. Since the 1950s, the Chamber has been totally sanguine about every possibility of increasing business with oil tankers in the days to come.[100] Therefore, in April 1952, the chamber wrote to the Chairman of the Bombay Port Trust.

> It is understood that some of the tanker companies have already started making enquiries about the available facilities for repair to their ships and, if India is to secure any of this work- which may well be a valuable "oil dollar" earner- in the future, it is clearly desirable that Bombay should make every effort to ensure that the necessary facilities will be made available in good time.[101] (emphasis mine)

The above statement contains some other indications. Firstly, it indicates that, on occasion, non-governmental organisations and port trusts have endeavoured to create a potential relationship between the national government's policies—such as those aimed at reducing foreign currency expenditures—and their own interests. This letter aimed to reassure the government that expenditure on repair facilities or the shipping sector would benefit the

[98] *Ibid.*, p. 247.
[99] This is evident with the fact that since 1950, many nations of the Indian Ocean started developing repair facilities for oil tankers in their seaports such as Durban, Pakistan, and Singapore/Malasia.
[100] BCCI, Committee Report, 1952, 'Wet Berth Facilities for Repair of Tankers in Bombay', p.287.
[101] *Ibid.*, p. 288.

national economy and align with government policies. This is because much of the work of developing dock repair facilities for tankers was part of the large development project of the port trust, for which the government often allocated limited funds. Secondly, it further shows that in the latter half of the twentieth century, foreign vessels or tankers encountered difficulties while preferring to locate a repair base in India, indicating that Indian ports, likely due to their geographical position in the Indian Ocean, garnered interest from foreign shipping lines.[102]

In 1959, the Central Government formed a committee to investigate the comprehensive ship repair facilities available at the ports of Calcutta, Bombay, Madras, and other major ports, chaired by the then Deputy Minister of Transport and Railways. Within months, the team conducted site visits to the ports and delivered the report. The committee's report emphasised the pressing necessity to enhance ship repair facilities at major harbours and urged the government to assume full responsibility in this regard. The committee further stressed the logic that "it would be unwise for any country to rely on another country for the provision of repair facilities, and that in times of emergency, such reliance may prove dangerous."[103]

3.8 Infrastructure and Incentives

A. Link Road

Among the other steps that the Bombay Port Authority took to improve both the quality and potential of the port to handle the container trade was the establishment of roads from the dock to the warehouse and from the warehouse to the city or other destinations. Such was the case in 1979 when the trust felt the urgent need to build up a link road between Malet Road and the Manganese Ore Depot. This felt so urgent that the authority finally came to the decision to uproot a railway line that was laid just between the proposed link road. Also, earlier, the Consulting Engineers, while preparing the Master Plan of the Bombay

[102] Needless to say that the BCCI's view on such an issue proved soon to be positive as within a decade. In 1960, the Bombay Port first introduced the large tanker service.

[103] BCCI, Committee Report, 1959, 'Ship-Repair Facilities—Committee to Investigate', p. 248.

Port, felt the same need. Furthermore, this road was built with the purpose of easing the movements of container traffic; thus, other types of transportation were officially forbidden through this route.[104] However, there were some bottlenecks. The first one came from one of the port's schemes itself, the Metropolitan Transport Project, from which the order for the uprooting of the existing railway track needed to be approved. The second bottleneck was the potential financial burden that the port might face.

B. Berth allocation to Indian ships

The second strategy devised by the port trust to encourage container trade was the policy of allocating berths specifically for handling containers. This was one of the actions taken by the BPT during the early days of the growing container trade on the West Coast. In 1979, two berths were earmarked especially for handling container vessels, along with RO-RO vessels. The port trust fixed the speed at about 120 containers per day to be handled in these berths, with a maximum allocation of 48 hours per vessel. However, in reality, it was not achieved. This was because in those days Indian ships were not fully containerised; most of the shipping companies traded containers with their conventional vessels along with the break bulk cargo; thus, their handling speed was quite low compared to what could meet the port's expectations. For example, the Shipping Corporation of India ships also traded containers with conventional vessels and requested the port trust to give priority to their ships for berth allocation. While such an arrangement was not always possible because of the long queue of other container ships waiting for them, the BPT was in favour of those conventional container-cum-bulk cargo Indian ships and sometimes allocated them extra time beyond 48 hours in the berths for handling containers. This was done as a "promotional measure" for Indian ships engaged in overseas trade. It is also to be mentioned that the urge to give preferential treatment to conventional vessels plying in overseas trade extended beyond the national boundary. For example, the Indo-Soviet Trade Agreement in 1979 made an agenda for Indian ships that were conventional vessels and

[104] MPAR/PV/ Trustees Board Meeting, 27th November 1979, Appendix to T.R. No- 371, p.1008.

traded containers with the USSR to be given special priority for berth allocation to Soviet ports.[105]

3.9 Feasibility Report

When the Master Plan for the Port of Bombay was being prepared in 1970, a number of research groups and organisations, including Consulting Engineers and Dr. V. G. Bhatia, Director of Transport Research, Ministry of Shipping, had previously expressed their opinions regarding the port's potential for container traffic. Given the Bombay port's location and the size of its hinterland, their assessment backed the necessity of installing equipment to make the port fit for processing containers. But because of certain obstacles, including draft restrictions, inadequate backup spaces, and a lack of equipment, they supported the establishment of Nhava-Seva as a satellite port of Bombay that would be used only for container traffic. In order to manage containers at the Bombay docks with restricted capacity, some measures were used up until that point. The port's container commerce was mostly restricted to this complex since berth number 12B provided a sizable open area for stuffing and destuffing containers. They occasionally utilised different ports to minimise the waiting time in tide, but at the time, ships were of various types and traded both containers and break-bulk cargo in traditional boats. Only the Contships employed third-generation container ships, which required shore cranes to load and unload containers, out of the 20 shipping lines that dealt with the Bombay port until 1978. Prior to 1978, the majority of shipping companies that dealt in containers at Bombay port were foreign-based. However, one Indian shipping line, the Shipping Corporation of India (SCI), started container trade with Australia.[106] Therefore, in practice, it was not thought necessary to build or upgrade the port's container facilities. And even some of the foreign shipping lines, for example, the ALP, installed the container handling equipment at their own cost and brought in their own operators in Bombay port.

[105] MPAR/PV/ Trustees Board Meeting, 8th May 1979, 'Reservation of berth for vessels carrying containers and break bulk cargo on Indo-Soviet Trade and for Indian flag vessels on other trade routes', p. 395.

[106] Mumbai Port Authority Records [MPAR]/ Proceedings Volume [PV]], Meeting of the 21st November, 1978, 'Container Handling Facilities at Bombay Port Feasibility Report', Appendix to T.R No. 241, p.520.

Although the growth rate and profitability of container shipping were still vague, the Bombay Port Trust felt the need to install some minimum facilities for container trade. This was done specifically to support the nation's expanding export economy. These consisted of the following:

Table no. 3.3, Interim facilities provided by the BPT at 12B Indira Dock for container shipping[107]

Sl No	facility	Area
1	A groupage shed	2650 sq. m.
2	Container-park	14,000 sq.m.
3	Quay length	180 m.
4	Apron	6000 sq. m.
5	Depth of water alongside	9.10 m to 10.40 m
6	Area under shed, road *etc.*	8,1000 sq. m.

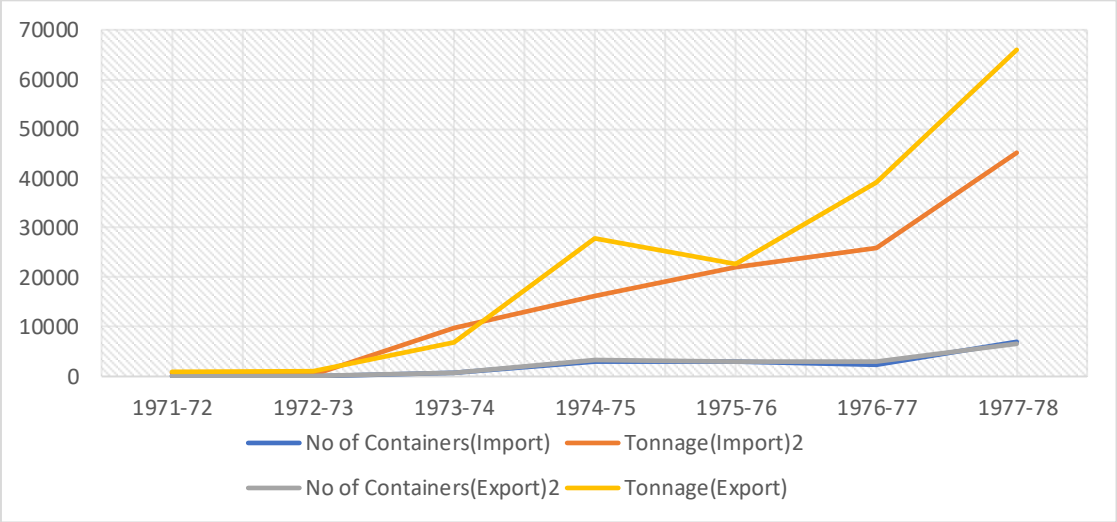
The other important measure of the BPT, as well as the government, was the agreement with Marine Transport International Co. Ltd. (Bermuda), by which the MTI agreed to provide a 200 T mobile crane for loading/unloading containers from ship/shore and two mobile container machines suitable for 20'/40' ISO containers. This agreement was signed initially for two years and was extendable up to one more year, depending upon approval from the government. Additionally, MRT supplied its own personnel to operate such machinery.

These facilities, despite their limitations at the time, were effective in attracting container traffic and other unit load ships. This is evident with the arrival of RO/RO ships in the port. In 1978, the port first handled the RO/RO ships operated by the CGM of Paris. The port began handling the CGM of Paris's RO/RO ships for the first time in 1978.

[107] *Ibid.*, p.515.

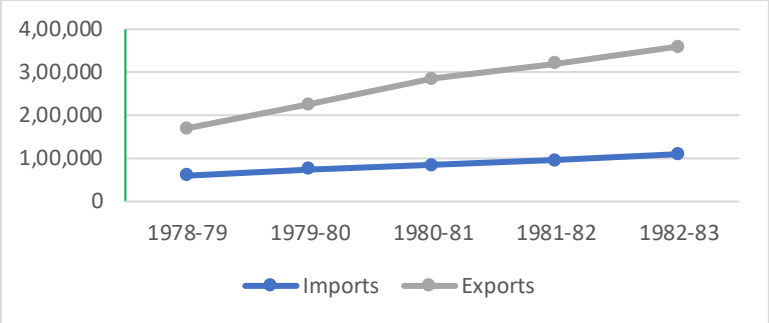
Additionally, other RO/RO shipping companies started operating at Bombay port shortly after the CGM Paris ships arrived at the port. The positive vibe to the port was that those shipping lines found the 12B berth very suitable for trading unit loads. Within a few years, the port anticipated that, despite the fact that the majority of shipping lines at the time employed traditional ships, unit load transport—such as pallets, RO/RO, and containers—would have been the future trend of oceanic shipping. All these circumstances, along with the need to meet the country's export trade, led the BPT go with a feasibility study. The aim was simple: "providing a proper service in a limited number of berths to a sizeable proportion of the traffic." Therefore, to the port authorities, not the quantity but the quality of container handling capacity would seem more important in the initial stage.[108]

Graph No. 3A, Container Traffic in the Port of Bombay (1971-1978)[109]



Graph No. 3B, Traffic forecast of container trade in Bombay Port (in tonnes)[110]

[108] *Ibid.*, p.516.
[109] *Ibid.*, p.520



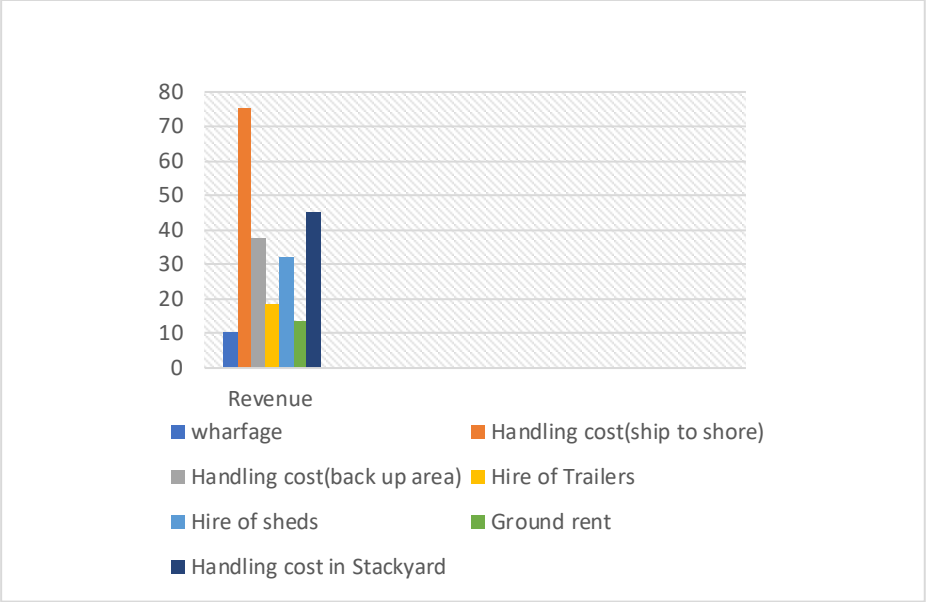
The study estimated that in the future, the Bombay port would handle about 30,000 TEUs of containers annually. The establishment of a container goods station with the sole goal of stuffing and destuffing containers was the first action taken by the port authorities in response to this prediction. For this, the Manganese Ore Depot was chosen. Earlier, it was used for the export trade of ferro-manganese, which then lost its ground. It was just 4 km from the docks. To make handling containers easier, two types of equipment—portainers and transtainers—were suggested to be installed.[111]

Regarding the outcome, the port was unlikely to directly profit from such a large investment in container facilities. Overall, containerisation primarily reduces ship turnround times and decreases ship berth days. However, similar advantages would not be anticipated in nations like India, where the practice of carrying containers in traditional vessels was still prevalent. As a result, the feasibility report was unable to quantify the investment's social impact. However, they opined that to get the proper benefit of containerisation, the customs laws in India should be flexible enough to permit the easy movement of the sealed container box within the country. The port might revise or increase the rates of handling containers to generate higher revenue, but generally, the overall project was seen as a "promotional investment."

The possible output or revenue that could be earned by this investment is as follows:

Graph no. 3.C, Possible imcome of the port regarding investment on container facilities at Menganese Ore Depot, 1979 (in lakh rupees)

[110] *Ibid.*, p.521.
[111] *Ibid.*, p.525.



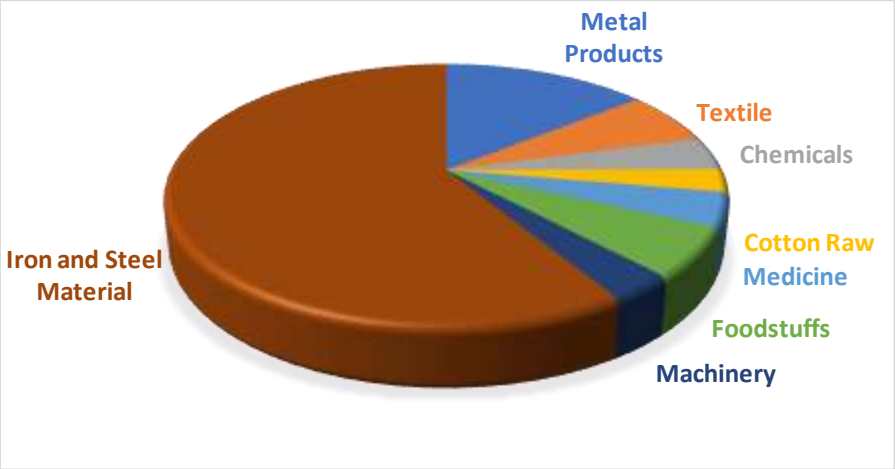
In regard to the capital expenditure of Rs. 1120 Lakhs, BPT estimated that a total of Rs. 231 Lakhs may be earned, which would achieve an internal rate of return of more than 12%. So, in its initial stage, this IRR was quite satisfactory to the port authority, as this whole project was seen as a promotional investment in keeping the interest of the country's export trade. [112] This was because the foreign buyers gradually favoured receiving freight and commodities in containers as opposed to using the traditional technique. Therefore, Indian exporters and commodities would lose international markets if Indian ports were unable to make appropriate facilities for containerisation.[113]

However, the bottleneck of India's containerisation extended beyond its financial resources; the country also required the know-how necessary to run such complex machinery efficiently. Because of this, the research emphasised the need for hiring highly trained and technically proficient workers with adequate nautical expertise. The creation of a connecting road specifically for container traffic was the report's other proposal.

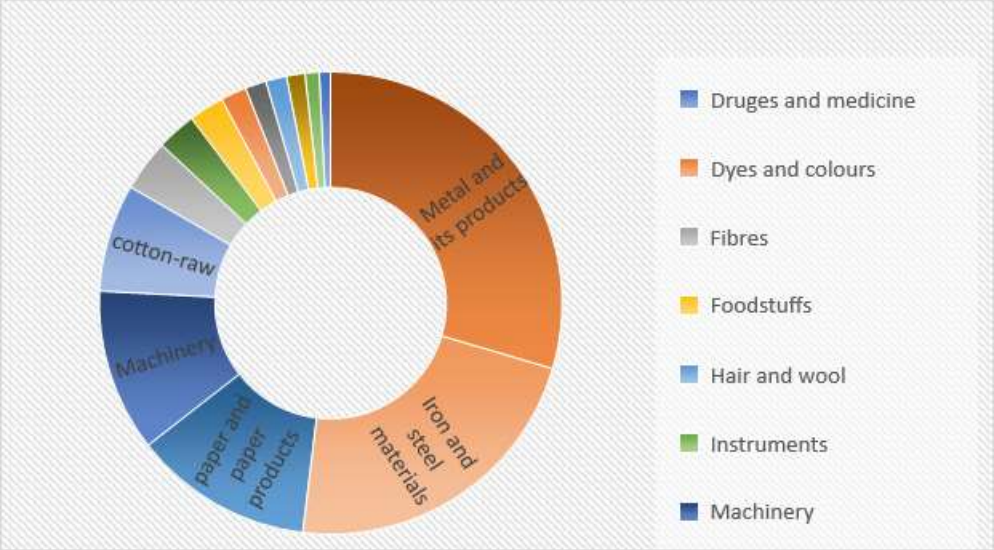
[112] It is evident with the fact that the handling cost of containers from ship to shore was fixed at the rate of Rs. 500/- for per import container and Rs. 100/- for per export container.

[113] MPAR/PV, Meeting of the 21st November, 1978, 'Container Handling Facilities at Bombay Port Feasibility Report', Appendix to T.R No. 241, p. 517.

Graph no 3D, Commodity handled at the docks during 1976-77 and considered suitable for being containerised (Export)



Graph no 3E, Commodity handled in the dock



3.10 ESCAP on Bombay Waterfront

A substantial assessment on containerisation at the Bombay Port was done under the aegis of ESCAP, a specialised section of the United Nations established to address different trade

and shipping challenges faced by developing nations. Between October and November 1979, ESCAP specialist Mr K. Enomoto and his team carried out a survey in three prominent Indian ports (Bombay, Madras, and Cochin) and submitted the report to the Ministry of Shipping. This report was more specific than the previous one, concentrating on three primary matters: examining the current state of container shipping at these three ports, along with forecasting future trends, identifying optimal locations for container handling, and emphasising the significance of the "time element" in the container economy of this country, while also providing recommendations particularly for port personnel. In accordance with their plan, they surveyed Bombay Port from October 29, 1979, to November 1, 1979. Mr Enomoto underscored the necessity of addressing the matter of multimodal transport not only with the port authorities but also with diverse stakeholders involved in shipping throughout this study. This is essential as it marks the period when several shippers' associations were established with the government's support. These associations took significant efforts to diminish the influence of the conference lines. The study underlined many critical issues that both the port workers and the administration should prioritise. *First*, a container port must be adequately equipped with handling facilities, ensuring that the facilities exceed the entire matrix of both import and export containers. A container ship should not be delayed in the harbour. Otherwise, such a massive undertaking requiring substantial financial investment would be economically unfeasible. *Second*, it proposed the installation of the *Transtainer*[114] at Bombay Port as the most appropriate system for container handling. *Third*, the committee expressed greater worry with the customs method for clearing containers in India, which necessitated the opening of containers at several transit locations. This approach caused further delays in the delivery of products and extended the transportation duration. This was often harmful to the economy of containerisation and multimodal transport. The ESCAP experts expressed opposition to this and advocated for the unrestricted movement of containers from the docks to interior areas. *Fourth*, a connector road between the dock and the container depot, was endorsed by the research panel, as advocated by several prior surveys. The existing railway system was only equipped to accommodate 20 ft containers, and any modifications to allow larger 35-40 ft

[114] The other two methods were Chassis system (known as the Sea-Land system) and Straddle Carrier system. Although the use of a mix method that is a combination of all three was the trend in the field of world shipping.

containers would likely result in overcrowding at the port. Consequently, a purpose-built connecting road only for the efficient transit of containers might serve as a solution to this issue. The expert emphasised the need for standardising equipment at the ports, asserting that producers must provide timely delivery of machinery, while discouraging the acquisition of old or second-hand equipment.[115]

Despite the dearth of container handling infrastructure, Bombay was not yet inundated by containers at that time, partly due to some methods implemented by the port administration, such as the dispersal of container stuffing and destuffing operations in scattered areas. A total of 10 locations within the port complex (about 25 acres) were utilised for cargo handling. This effort helped lower the risk of container overpopulation within the port complex and cut down the waiting time for container ships. However, for the increasing trend of containers and the possible future trend, which was predicted to be 50,000 tonnes, the experts supported the project of procuring and installing capital-intensive container handling equipment in the port complex and marked it both as "reasonably justified"[116], and "extremely urgent"[117]. They recommended three spaces to be developed for containers: 13 & 13A in Indira Dock, 12B in Indira Dock, and the Manganese Ore Depot. Along with the containerisation, the committee further recommended that the RO/RO facilities be installed and developed in Bombay Port.

This research primarily focused on the rising patterns in container traffic in Bombay, which were substantial in their assessment, hence emphasising the *urgent* necessity for investment in container handling equipment. It recognised the advantageous geographical location of Indian main ports for accommodating mother container ships and noted that the trade balance of imports and exports rendered Bombay Port appropriate for container handling, despite the absence of adequate equipment for such operations. It was this simple mechanism that the port authority was capable of handling a large number of containers.

[115] The committee argued about the difference between the policy of purchase a second-hand ship and a used equipment as there was always a free open world market for the former but nor for the later.
[116] MPAR/PV/Meeting of the 27th November 1979, 'Container Handling Facilities at the Ports of Bombay, Madras, and Cochin', report by Mr. K. Enomoto (ESCAP Expert), T.R. No. 371 (Appendix), p.1023. / BPT,92
[117] *Ibid*, p.1024./P93

However, in spite of such a progressive scenario, Mr Enomoto was in favour of Nhava-Seva because, according to the survey, Bombay Port could not handle more containers, both in volume and numbers, due to its paucity of spaces. This team further noticed that most of the categories of the bulk cargo that were exported from this port were containerisable, approx. 400,000 tonnes in 1977-78. This fact was very much crucial because it proved that the commodity composition of post-independent Indian export trades, which was carried by general bulk cargo ships, could be traded with container ships, thereby validating the potential integration of India and its seaports into global container trade networks. It is remarkable to note that they did not advocate for the development of the Island Container Depot or land transportation, both of which are essential components of containerisation in a country with a vast hinterland like India. Instead, they advocated for the establishment of a feeder service, a more economical than land transportation.

3.11 RO/RO in 1980-85

The west coast of India saw a seamless transition to multimodal transport at the start of the 1980s. In addition to containerisation, several other forms of cargo transport spread in Indian ports. In addition to containerisation, several additional methods of freight transport have proliferated in Indian ports. This is apparent in the case of the Ro/Ro method. Two primary considerations motivated the advent of Ro/Ro transportation. Initially, to enhance coastal shipping on the Bombay-Goa and Madras-Calcutta lines, where freight volume was significantly rising, the government began to invest in alternative transportation methods. Second, the matter of saving fuel and the economy of carrying goods by rail, road, and sea became an important issue for the government. In fact, to the government, introducing this kind of new transportation was an *experiment*. All of these ideas were formally initiated on June 26, 1980, at the MOST meeting in New Delhi, when the transport secretary made a statement in favour of the Ro/Ro method. In September 1980, following a three-month interval, the Minister of Inland Waterways of Goa highlighted deficiencies in the current transportation system that impeded the Bombay-Goa commerce and proposed the initiation of Ro/Ro vessels on this route. Subsequent to these ideas, the government had initiated measures to advance an innovative transportation system, as the Transport Secretary

promptly instructed Mogul Line Ltd., a state-owned shipping enterprise, to commence the new Ro/Ro service on the Bombay-Goa route. The Mogul Line was instructed to devise a plan and present it to the government for formal approval.[118]

Consequently, the Mogul Line undertook a feasibility assessment for the proposed concept and determined it to be viable. This analysis indicates that the new transportation would provide advantages and be economically viable not just for the Bombay-Goa route but also for other coastal routes. This analysis concluded that the Ro/Ro service would operate on a set schedule regardless of tidal conditions, perhaps for 11 months each year. The report further advised the provision of specialised facilities and the installation of certain equipment at the ports to enhance the efficiency of the new transportation system. Interestingly, all those feasible reports identified Bombay Port as the *focal* point for maritime traffic.[119]

However, the case of introducing Ro/Ro between the Bombay-Goa route created a tension between the Mogul Line and Bombay Port Trust. As per the letter sent by the manager of Mogul Line to the Bombay Port dated 18th August 1981, the Bombay Port decided to impose an extra charge on each truck for using the Ro/Ro vessel in the port. The Mogul Line strongly opposed such a policy and notified the port authority that such an imposition of a charge "would not encourage establishment of a successful Ro/Ro service" in the country. The Mogul Line further disagreed to bear any other cost with their fund for installation of equipment in the port complex with the logic that there was no provision for owning a berth for a shipping firm in the port.[120] In the next years, Mogul Line took step to initiate a Ro-Ro service (passenger-cum-cargo) between Bombay and the ports of Mormugao, Jafferabad and New Mangalore and sent a proposal to the ministry of Shipping

[118] MPAR/PV/Board Meeting of 14th September 1981, T.R. No. 286, Appendix 'A', 'Note on Roll on/Roll off passenger-cum-cargo service on the West coast of India- Proposal by the Mogul Line Ltd., Bombay', p.72./ BPT-1980-85, P55

[119] *Ibid.*

[120] MPAR/PV/Board Meeting of 14th September 1981, T.R. No. 286, Appendix 'E', Letter from Manager, Mogul Line Limited, to the Chief Engineer, Bombay Port Trust, (dated 18th August, 1981), p.82./ BPT-1980-85,56-57

to develop the infrastructural facilities at the Wharf, although till 1983 this was still awaiting approval from the government.[121]

3.12 Container Freight Station

Apart from equipment and capital, if any other issue was getting topmost attention from both the port trust and its allied interest groups in the 1980s, it was the need to set up a container freight station. This demand might have been due to two factors. The first was associated with the trend of world container traffic and, as a result, its impact on the Bombay port. Between 1973 and 1980, container movement in Bombay port, comprising both export and import, reached a pinnacle. The port was unable to accommodate such a substantial number of containers inside the dock complex. Additionally, it exacerbated congestion at the port and facilitated the protracted turn-round of ships. A more efficient and better solution was demanded by importers, shippers, and exporters. The second issue was the incapacity of container trade networks in India to provide door-to-door delivery of containers. This situation was, in fact, contrary to the principles of economies of scale. In 1984, the General Manager of the Bombay Port Authority commented on the progress of containerisation in India, which may offer more insight in this context. He lamented:

> In India, the containerisation is not working as a complete system as the movement of cargo in containers is not from the source to destination. As a step in the direction of introducing such a correct system, the concept of Inland Container Depot was conceived. Inland Container Depots are dry ports where customs facilities and other infrastructure required for handling of containers are provided.[122]

The aforementioned issues prompted the consideration of establishing a container freight station (CFS), a designated space for the stacking and storage of containers, equipped with efficient cargo handling machinery. Initially, the setup of CFS was proposed to be started in the early eighties, but for several reasons, it did not achieve its goal. The Bombay Port Trust was of the opinion that the CFS should be established outside the port area

[121] KPTMA, 'Administration Report of the Bombay Port Trust', 1982-83, p,25.

[122] MPAR/PV/, Excerpt from the Proceedings of the Board Meeting dated 14th January 1984, T.R. No. 43, 'Proposals for Charges on ICD containers'.

because there was not sufficient space available within the dock complex. Also, the Bombay port handled other types of cargo apart from containers. So, allocating much more space for the container business may deter other shippers and result in chaos. His position at the port trust encountered opposition from nearly all parties inside the port. Several members contended that establishing a CFS outside the port complex may restrict the port's influence and administrative efficacy over the CFS. Some argued that permitting private entities to establish Container Freight Stations on their own property would be inadvisable. The members of the workers' union highlighted the potential adverse impacts on dock labourers who may lose employment due to the establishment of a container freight station outside the port complex. However, the greatest discouragement was from the government's own customs department. They firmly rejected the proposal to establish the CFS outside the port complex, since it may impede the customs process. Another difficulty also arose from the Nhava Seva project. As this project aimed to create a port to handle the containers with all CFS facilities in the port complex, establishing additional CFS for the Bombay Port would be highly unrealistic.[123]

The port, however, advocated for the establishment of a Container Freight Station (CFS) outside the port complex and supported its position with many counterarguments. Some of the members of the BPT opined that the Port of Hong Kong handled almost three million containers and has CFS outside the port complex. They further argued that although the CFS would be set up on the land of some private complex, the overall administration would be in the hands of the port trust itself. Therefore, the lack of unambiguous support for the port's stance on CFS further delayed the implementation of this issue. It was determined that the Board should personally visit the location to find a workable solution and that the labour problem should be re-examined.

Subsequently, these hurdles were progressively surmounted, and the enhancement of additional facilities at CFS at Bombay Port became a priority for the port management. This is evident from the port management's attitude towards the many tenders issued for developing electricity and other official infrastructure in CFS. Of the total 50.47 crores,

[123] MPAR/PV / Note of discussion at the Board meeting held on 12th August 1980, T.R. No. 209, p.18 /36

about 1.5 crores were designated for this task. A nationwide tender was issued for the prompt execution of this task. Normally, when a tender is called upon, the authority fixes some parameters for final selection, which is called prima facie. But in this case, the BPT tender committee favoured reducing some restrictions by referencing the criteria employed by the State PWD, which included an annual turnover of Rs. 50 lakh and an anticipated work cost of Rs. 100 lakh. It was decided by the committee to pay more attention to the earlier work experience of the participating firms with Bombay Port for determining their suitability and their technical capability of doing such work. Every firm was asked to furnish the details of their past projects in their tender. The committee was flexible in this matter to foster the development work at CFS. A total of 8 firms had submitted their reports on the development of CFS at Timber Pond, out of which only one, the Ampee Construction Co., was considered prima facie not suitable for this project. The selection was made due to their bad reputation for early delays at Bombay Port. This tender case effectively demonstrated that the CFS issue garnered the port authority's attention, and with some flexibility, the authority was attempting to resolve the problem by investing in potential solutions.[124]

Similar to CFS, the concept of ICD also became a reality in Indian transport. In 1984, several ICDs were set up, including those in Bangalore, Coimbatore, Guntur, and New Delhi. Additionally, the government suggested the establishment of multiple new ICDs in Ludhiana and Faridabad in the future. The establishment of ICD in New Delhi was pivotal for the containerisation of Bombay Port, as it stimulated container transportation between Bombay and Northern India. [125]

3.13 Container Handling Facilities

The sudden spike in container boxes at Bombay port spurred the authorities to consider investing in the installation of container shipping infrastructure. This was profoundly felt, as evidenced by the statement issued by the CME of Bombay Port at the end of 1980, which states the following:

[124] MPAR/PV/ Excerpt from the Proceedings of the Board Meeting held 22nd July 1986, 1984, T.R. No. 179, 'Report of Tender Committee', [Tender No. E.14/1986], PP.13-16 /358-61
[125] MPAR/PV/, 'Proposals for Charges on ICD containers',Op.cit. / 270

> The Bombay Port is handling over 9000 containers a month and it has already become very difficult to deal with this traffic in the absence of suitable equipment. This situation will become worse when more numbers of containers are requested to be handled in the near future according to the present trend. It is, therefore, imperative to provide at least the stacking equipment early to cope with the situation.[126]

Therefore, the CME's statement was alarming about the blatant need for procurement of container handling equipment in Bombay. And this was exactly the thing that the Bombay Port Trust did when many of the proposals that the study group or Mr Enomoto from ESCAP recommended/prescribed for Bombay Port were approved by the trust. The survey's recommendations included the installation of one quayside gantry crane at Indira Dock and three transtainers—stacking cranes that are either rail-mounted or rubber-mounted—for the ports of Bombay, Madras, and Cochin. The installation of such technology at Bombay was deemed "extremely urgent" by the experts from ESCAP, perhaps as a result of the rapidly increasing container traffic.

Table No. 3.4, Container Handling Equipment for BPT recommended by ESCAP in 1980[127]

Sl. No	Equipment	Estimated Cost (in Lakhs)
1	Quay Side container handling crane	Rs. 350
2	Rail-mounted stacking cranes	Rs.360
3	Prime Movers Chassis	Rs.50
4	Rails for the cranes	Rs.24
5	Power supply for the cranes	Rs.8
	Grant Total=	Rs.792 Lakhs

The trust made an effort to get the approved TR fulfilled and to be funded by the central government. And finally, Rs. 792 Lakhs of rupees was approved and sanctioned by the Ministry of Transport, Government of India, in the month of September. Nonetheless, in endorsing those recommendations, both the port and the national government verified

[126] MPAR/PV/July-December 1980, 'Procurement of Container Handling Equipment'.
[127] *Ibid.*,p.52.

the proposals received by other major Indian ports for the installation of container shipping equipment, and in many cases, it was found that there were significant price discrepancies among the offers made to various port trusts. For example, the Cochin Port Trust received the offer of installing Rubber-tyred stacking cranes at a cost of about 50% lower than that of the Madras Port Trust. In December 1980, a meeting was convened to assess the procurement status of container handling facilities at three major Indian ports. Ultimately, it was decided that the Bombay Port would proceed with the installation of rubber-tyred stacking cranes rather than rail-mounted ones, and it could contemplate the lower-priced offer received by the Madras Port. In addition to the facilities to be established at the port, the trust also suggested reviewing the policy of granting container ships preferential treatment at the docks, a practice implemented in the past.[128]

The expansion of container traffic in Bombay is also reflected in the modifications of the port trust policy regarding demurrage on containers. Until 1980, the port provided tax-exempt facilities for commodities held in containers at the docks. Subsequently, the trust altered its strategy and sought to reform the different rules pertaining to the storage of containers in the ports. According to an estimate by the port trust, about Rs. 54 lakhs were collected as ground rent for containers during the financial year 1979-80. If the proposed adjustments were approved, the BPT would anticipate that revenue from container trade would go up to Rs. 120 Lakhs. The proposal to modify the charges associated with container stuffing and de-stuffing aimed to alleviate congestion at the docks.[129] Many shipping companies, notably the Shipping Corporation of India (SCI), have responded to these changes by proposing recommendations to the port trust for the improved execution of the new policy. The SCI asserted that currently, the BPT lacks container handling facilities; hence, no additional tax ought to be levied on containers if the port fails to provide de-stuffing services. The Managing Director of the SCI stated:

> I regret that urgency of the proposal ….of the Port Trust meeting held on 26th June 1980 was perhaps not fully appreciated. The sheds in the port are already very congested, traffic in the port area moves at snail's pace and very soon things can

[128] *Ibid*.,p.32

[129] MPAR/PV/July-December 1980, Docks Manager Letter No. D/4-3/7465 of 80-81 dated 09th June 1980, /142-43

> become chaotic…..there is no denying the fact that the Management of the Port should come forward with a total picture of their requirements in enforcing the new rules which they have proposed.[130]

Along with comments on the new policy, the SCI further suggested considering the recruitment of fresh staff to facilitate the effective implementation of a new tax on containers, since it could place an additional load on the accounting department. The SCI emphasised the necessity for flexibility in container export trade, advocating for a grace period of 10 days regarding taxes and processes.

3.14 A Parallel Challenge: Bombay Port & JNPT

Throughout the 1980s, the Bombay Port Trust Authority was going through many internal and external forces that impacted the growth of containerisation in the port complex. Some served as positive stimulants, such as the increase in container box usage and the rising number of container ships visiting the port, together with the promising results from various research groups that indicated a favourable outlook for future development and investment in container boxes. However, the port authority also encountered opposing elements. One of these was the prospective development of Nhava Sheva as a satellite port for Bombay, a plan intended solely for managing container traffic, which adversely affected the entire growth of containerisation at the Port of Bombay, particularly with regard to investment. Initially, it was the Bombay Port Trust that made a plan for a new port having a draft capacity of 16 ft. to handle the large cargo ships and container ships. Even in the early stage, a considerable amount of funds from the BPT was invested in the formative stage of the port of Nhava Seva. According to the records of the Bombay Port, it was primarily decided that the new port, Nhava Seva, would act as a part of the BPT and under the Bombay Port Trust administration. Subsequently, this matter garnered attention from other interest groups, including the Central Government, which advocated for the establishment of the Nhava Seva port as an independent entity with its own administrative authority. Such a decision/move by the central government created complexity among the trustees of the

[130] MPAR/PV/July-December 1980, Appendix 'C' to T.R. No. 265, From the Managing Director, Shipping Corporation of India to the Chairman (Offg.), Bombay Port Trust, June 30, 1980, 'Charges on Containers and Containerised Cargo in the Port',p,79/ 148

BPT in the decision-making process of whether additional investment in container handling facilities at Bombay Port would be right or feasible. Although this issue was earlier discussed in the administrative meeting of the Bombay Port in June 1982, it was reviewed in depth during the Board Meeting, when the trustees expressed differing viewpoints. Dr Shanti Patel stated that the primary objective of establishing the Nhava Seva port was to alleviate the excess container traffic at the Bombay port. Given that both ports occupy the same geographical position and possess identical operating facilities, it would be impracticable for Nhava Seva to function as a distinct port. Additionally, he highlighted some inadequacies in the statute governing the management of Nhava Sheva Port, as it did not have any representation from both the interest groups and the Bombay Port. This would deteriorate the situation further. He also suggested the central government reconsider the issue again. Another trustee, Shree D. M. Parekh, said that establishing a separate port in close proximity to the Bombay Port would introduce additional challenges for both port administrations. He cited the Salaya Port, established as an extension of the Kandla Port, which was functioning effectively. A. Paul Fernandes contended that, from the perspective of port users, it would be advantageous for Nhava Sheva to be integrated into the Bombay port. Concerning the topic of modernisation, they cited the example of Port Hamburg, where it was feasible to operate the existing port while successfully upgrading to current technology instead of constructing a new facility.[131]

Although the majority of the Bombay Port trustees supported the integration of Nhava Seva into Bombay Port, some members opposed this view, arguing that, for the enhancement of trade and shipping, as well as the nation's export trade, it is imperative to establish Nhava Seva as an independent port, separate from the jurisdiction and administration of BPT. Their claims were based on three premises: Initially, several trustees asserted that ongoing labour concerns at the Bombay Port posed a significant challenge to shippers. The cargo handling costs at Bombay Port were among the highest in Asia, while ports in the Middle East, Sri Lanka, and Southeast Asia were implementing modern mechanised cargo handling methods. Indian ports impose charges that are over three to four times more than those of these ports. To adapt to these changes and enhance the

[131] MPAR/PV/ Note of discussion at the Board meeting held on 14th June 1982, pp.62-64. /BPT, 1980-85,126-128

competitiveness of Indian export products in the global market, it was imperative to develop Nhava Sheva as an independent port, where greater emphasis would be placed on managing fully cellular container ships and bulk cargo using modern, capital-intensive equipment. Secondly, they referenced previous survey studies indicating that the establishment of a new port in proximity to Bombay would not adversely affect the interests of the Bombay port, since the hinterlands of both ports are quite extensive. Additionally, several trustees alluded to the establishment of Haldia as a component of the Calcutta Port Trust, which ultimately engendered numerous administrative challenges and yielded adverse outcomes.[132]

3.15 Environment as Impediment

The Ministry of Environment, a different government department, was the source of another subsequent challenge that the Bombay Port Trust confronted in this phase. Here, the issue was more tenable in light of environmental concerns but equally challenging to fix. The then-prime minister intervened during the preparation of the feasibility report for the proposed Nhava Seva port and expressed concern over the potential environmental impacts it might have in the future. The prime minister addressed certain environmental concerns and mandated that the primary objective of establishing Nhava Seva is to manage containers solely to alleviate congestion at both the Bombay Port and the city, instructing that the report should have a plan to create some green areas/parks in the area of the Bombay Port premises. Therefore, it would be the sole responsibility of the BPT to allot some areas for setting up parks along with the extraneous areas of the port that were being used for container handling.

The issue progressively got intricate, and the allocation of land for establishing green spaces or parks inside the port complex garnered paramount attention from the Department of Environment, the Ministry of Surface Transport, and the Bombay Port Trust. All these departments had conflicting rationales, which eventually delayed the interim container management plan of the BPT. This institutional confrontation even spread further, as was reflected in their subsequent defensive strategy. For instance, while the Ministry of

[132] *Ibid.*, pp. 65-66. /129-31

Environment established a Working Group to investigate a range of ecological concerns within the Bombay Port area, the Ministry of Surface Transport responded by forming a Standing Committee solely to scrutinise the findings of that group.[133]

While evaluating permission for the container plan, the Ministry of Environment consistently emphasised that, despite the Prime Minister's directive, the BPT failed to provide any land for the establishment of green zones. This was also evident in the final Feasibility Report produced by the Ministry of Surface Transport, which lacked such a provision. Their only contention was that the primary objective of Nhava Sheva was to alleviate congestion at the Bombay Port. At that time, the port was handling about 250,000 tons of cargo each year. They stated that the BPT should reduce its container handling limitations to one lakh yearly, but the Bombay Port Authority was attempting to increase it by establishing more container handling facilities. This would result in significant congestion in Bombay and was entirely contrary to the directives of the Prime Minister, as well as the primary objective of establishing Nhava Seva, which they deemed "counter productive."[134] In addition, the Working Group made a demand of earmarking the area as 'Green', which would be used for parks in both the Master Plan of the Bombay Port Trust and the development plan of the Bombay Municipal Corporation.[135]

The Bombay Port Trust contended that numerous reports from various international organisations, including the World Bank and the Asian Development Bank, made it abundantly evident that the recently opened Nhava Seva Port would not reduce the port's share of container traffic and that, according to traffic projections, it would handle over 3 lakh TEUs per year by 1990. The port administration further stated that at present, the port was handling a large volume of containers with limited equipment and with high berthing rates. Therefore, the port did not consider the issue of selecting any "extraneous" territory within its jurisdiction.[136] It was opined that the decision regarding the shipment of cargo, particularly containers, whether via Bombay or Nhava Seva, should be left to the shippers'

[133] MPAR/PV/ Appendix 'B', T.R.No. 148 dated 28.06.1988, 'Proposed Container Handling Facilities at Bombay Port', p.33/ BPT 1986-90, p,379
[134] *Ibid.*,p.35. /, p,381
[135] *Ibid.*,p. 33. 379
[136] *Ibid.*,p.39./385

choice. According to the logic of the Bombay Port, the newly commissioned Nhava Seva should be treated as an *extended* part of the Bombay Port Trust; hence, investing in container handling equipment would be fair enough and necessary. The Standing Committee contended that the Working Group's proposal to divert cargo to alternative ports was impractical, as the Bombay Port managed containers and goods not just from Bombay city but also from the mainland. The port strongly held the view that commissioning the new Nhava Seva would not cut the source of its cargo nor restrict it inside the confines of Bombay City. The main cargo would still come from the mainland. In a reply to the PM Office, the Ministry of Surface Transport stated,

> As regards release of land in the Docks area of Bombay Port for parks, it is not possible to indicate, at this stage, if some land from Bombay Port could be released for laying parks. This could be examined only after the Nhava Seva Port Project has been commissioned and as and when some of the activities like ship breaking yard at Darukhana are shifted out of Bombay Port area.[137]

Normally, such a stance of the Bombay Port or the Standing Committee on various aspects relating to containers and others did not satisfy the Ministry of Environment, and that ultimately led to delaying the approval for further container development programs at the Bombay Port. The Working Group was dissatisfied with the reports of the Standing Committee, not only regarding Bombay Port but also concerning Nhava Seva. For example, the Ministry of Environment prescribed and decided that the areas in and around the Nhava Seva port should be earmarked as "Green Belt" so that no other agency should come up around the Nhava Seva. However, the Ministry of Environment took no such action.[138] At the end of 1987, a further try was given by the Ministry of Surface Transport when a meeting was called with the Ministry of Environment, but that did not bring any solution, as the Secretary (Environment) thought that any provision for developing container handling facilities at Bombay Port would directly contravene the Prime Minister's directives.[139] The Ministry of the Environment, however, offered several corrective actions. They concluded

[137] *Ibid.*,p. 33/379
[138] *Ibid.*, p. 37383
[139] *Ibid.*, p.38/384

that the Bombay Port needed to implement a novel approach, either from an administrative or economic perspective, to achieve its goal of reducing urban congestion.[140] It was stated from their end,

> The working Group is of the view that it is for the Ministry of Surface Transport to manipulate the economic factors responsible and induce the shippers to abide by the policy laid down by it in the matter of shipping through one port in preference to the other instead of leaving this to the *sweet will* of the shippers if the ultimate objective of decongesting Bombay Port/Greater Bombay is to be achieved.[141] (emphasis mine)

Despite such ambiguities and the suggestions made by the Working Group, the Bombay Port was stuck in their position and held the view that the opening of Nhava Seva would not affect the container trade of the Bombay Port, as the former would handle only the fertiliser and cellular container vessels, whereas the latter could handle the *combi* container vessels, which were in considerable numbers those days. The Bombay Port further argued that the government should wait another 3–4 years after the opening of Nhava Seva to obtain a genuine traffic forecast to determine whether Nhava Seva would impact the container traffic at the Bombay Port. The BPT was also in favour of the shippers' choice for the cargo shipment, of which port they would prefer. In contrast to the opinion of the Working Group, the BPT made a counter-argument that the government should rethink this issue from the point of a 'cost-effective solution,' as the Nhava Seva would require entirely new equipment and other facilities with a comparatively very high price compared to the marginal cost with existing facilities at Bombay Port for handling cargoes.[142]

How the Bombay Port's position on developing containerisation at the docks was radical can also be predicted with an event when the BPT responded to a newspaper article. On 12 May 1986, a reputed news agency, the *Financial Express*, published an article asserting that the Ministry of Surface Transport of the Government of India decided to cut down the Interim Container Management Plan of the Bombay Port by 25%. The ministry was of the

[140] For example, implementing differential charging/rates or rebate systems.
[141] MPAR/PV/ Appendix 'B', T.R. No. 148 dated 28.06.1988, 'Recommendation of the Working Group', p.46/386
[142] *Ibid.*/386

view that the newly commissioned port of Nhava Seva would handle a huge volume of containers and fertiliser raw materials, and thus the BPT should limit its container handling capacity to one lakh TEUs per annum (despite the fact that the trends of container shipping at BPT were considerably high, almost 2.56 lakh TEUs). The news item also paid attention to the issue of the high cost of labour for handling containers in Bombay Port, for which the Ministry took this decision. As mentioned, the BPT required a total of 21 men for the stuffing and de-stuffing of containers, against the seven men that were required in other Indian ports.[143] The trustees of the Bombay Port immediately reacted to this news item (although internally). In response to such news, one trustee, Mr S. R. Kulkarni, voiced his opinions and presented several arguments refuting the assertion. He contended,

> It is also not correct to say that diversion of container and bulk handling facility to Sheva will reduce the traffic level of Bombay Port to a great extent. In fact, the projections made by the Asian Development Bank do not support such a forecast. There is bound to be incremental growth in the VII as well as VIII Five Year Plans so far as the India's overseas trade is concerned. Despite the emergence of Nhava Seva, the Bombay Port will still continue to occupy its premier position in the matter of handling of break bulk cargo, container cargo, POL traffic.[144]

He also said that the report, which mentioned the high cost of labour for handling containers, was baseless, and in reality, the cost was lower. He argued, "As far as loading and unloading of containers to and from ships is concerned, the labour cost of Bombay is perhaps the lowest compared to the labour cost incurred by the users at other major ports of the country." Also, the other trustees, including the chairman, opined that the BPT would press this issue at the proper time once the Central Government approved their recommendation on container development.

3.16 ADB on Bombay Port

[143] MPAR/PV/ Appendix 'A', T.R. No. 148 dated 28.06.1988, 'BPT Hold to Prune Container Plan', *Financial Express* (dated 12th May 1986), p.32/ 378

[144] MPAR/PV/ Appendix 'A', Excerpt from the proceedings of Board meeting, held on 24th May 1988, T.R.No.126, 'BPT Interim Container Management Plan', Letter from the S.R. Kulkarni to the Chairman, BPT, (dated 16th May 1988), /p. 375

These ambiguities on further investment for developing container handling infrastructure at Bombay Port persisted till the end of the eighties, and the national government, in every correspondence with the Bombay Port Authority, was outspoken enough on developing the newly commissioned JNPT. At one time, the Bombay Port Authority eventually fixed its container handling capacity up to one lakh TEUs, which the government also proposed. It should be noted that even after Nhava Sheva was put into service, the trend of container shipping at Bombay Port remained high, at about 3 lakh TEUs.[145] It also confirmed the presumption of the Bombay Port container trade made by several other organisations and survey studies, including ADB, among others.

Following the cut-off of its total limit to handle containers up to one lakh TEUs, the Bombay Port Authority implemented unique measures to attract container trade, ensuring it remains the prime port for container traffic on the west coast. Instead of giving much priority to numbers, the authority, with the new limit, now started paying more attention to the *quality* of handling containers at the port. The Ministry of Surface Transport sanctioned a new scheme in 1989 to improve container handling facilities at Bombay Port.[146] In its initial stage, the total cost was determined to be 13.51 crores, but later, due to the devaluation of the rupee and the increase in the price of some equipment, it was modified and became approximately 26.5 lakh rupees. The main aim was to procure and install 3 Nos RTGs and VHF communication. This time, the offer for such a significant investment came from the Asian Development Bank instead of the national government.. It was their second project on the development of Indian maritime trade and shipping, called *India: Second Ports Project.* A loan agreement for the same was signed between the government/port authority and the ADB on August 10, 1990. The main motto was simple: the "optimum output" of Bombay Port and to make the container handling "cost effective."[147]

Several new plans were coined for achieving the above goal. First, container handling equipment until that time was mainly owned and operated by the private agencies. The

[145] MPAR/PV/ Proceedings of the Board Meeting held 21st January 1992, Appendix 'B', T.R.No. 12, 'Provision of Container Handling Facilities at Bombay Port (Revised Estimate)', p.31 /BBT-1990-95-P482

[146] MPAR/PV/ Proceedings of the Board Meeting held 3rd May 1991, T.R. No. 144, 'Provision of Container Handling Facilities, p.37./ P-459

[147] MPAR/PV/ 'Provision of Container Handling Facilities at Bombay Port Revised Estimate', Op.cit./P481

private agencies handled container shipping using imperfect equipment, which resulted in high handling costs. Therefore, by installing new imported equipment, container handling would become cost-effective and could reduce costs by 25%. Second, in the new scheme, it was proposed to set up the CFS within the port complex. With this strategy, the port authority would have more control over container handling, could reduce the dwell time of containers in the docks by mitigating unnecessary horizontal and vertical movement of containers, and the operation would be more perfect. Third, a possible parallel target was fixed to catch container traffic from other ports. Fourth, economically, it was calculated that this whole project was feasible in terms of its output or return. With the installation of this equipment, the Bombay Port would be able to accommodate larger ships of up to 800 TEUs, rather than smaller combi vessels that can handle only up to 450 TEUs. This would also reduce the shipping costs of commodities. The experts were also of the opinion that with the reduction of such handling charges, the Indian shipping lines could get a benefit.[148] Finally, the team calculated that this project could potentially generate additional revenue for the port:[149]

Table No 3.E, Economic Benefit of the new containerisation scheme funded by ADB

	Source	Profit in Rupees
1	Revenue from CFS Operation	144 lakhs
2	Revenue from Container yard Operation	72 lakhs
	Total Income/profit	216 lakhs

3.17 Liberalization Trumpet

[148] Till 1990s, in the whole container trade of the Bombay port, Indian shipping lines occupied a share of 40%.
[149] 'Provision of Container Handling Facilities at Bombay Port Revised Estimate', op.cit., pp. 56-59/ /P-495-98

The decade of the nineties in independent India is very crucial in terms of the nation's external trade and development. The country's new policy, which is generally termed economic *liberalisation,* paid utmost care to facilitate its international trade. Central to this vision—often encapsulated in the goal of achieving a "quantum jump in exports"—was the urgent need to modernise and expand the cargo-handling capacities of India's major international seaports. A reflection of this urgency was mirrored in the frequent correspondence of the Indian government with the interest groups associated with shipping, such as exporters, importers, their organisations, shippers' councils, chambers of commerce, public sectors, and, to some extent, labour unions in this period. This inclusive engagement culminated in the establishment of a special group by the Cabinet Ministry in a meeting held at Bombay in March 1994. This group was set up to examine the various bottlenecks and problems at the seaports for the quick clearance of cargo. The group consisted of members representing a large section of the Indian economy, which included the Chairman of BPT and JNPT, Joint Director of Foreign Trade Bombay, IMC, Bombay Nhava Sheva Ship Intermodal Agents' Association, Multimodal Transport Association, port labourers, Bombay Customs House Agents Association, Bombay Stevedores Association, Bombay Nhava-Sheva Container Terminal Operators Association, Confederation of Indian Industry, Western India Shippers Association, and Federation of Indian Export Organisation. Between March and April, this group held seven meetings and recommended several thrust areas to be developed immediately for facilitating the export economy of Bombay.[150]

With the coming of liberalisation in the Indian economy, the issue of containerisation at Bombay Port again received topmost attention. Two key developments fuelled this renewed attention. First, the report of the Group clearly mentioned that a significant portion of India's export trade via seaports was being conducted through containers.[151] Second, despite starting the operation of Nhava-Sheva as a container port, container trade in Bombay Port was rapidly increasing, which crossed 4 lakh TEUs per annum. With these facets, the group first made recommendations for several steps to

[150] MPAR/PV/Jan-Mar, 1994/ Board Meeting, 24th May, 'TR No 251, Report of the Study Group For Export Facilitation In Sea Ports', p,1106. / P541
[151] *Ibid.*,p.1107.

increase the potential of container trade in Bombay, such as easy customs procedures, amendments to the Shipping Bill, expeditious disposal of cargo, reduction of terminal handling costs, certificate facilities, and round-the-clock facilities for handling cargo at seaports. However, a more contentious and significant recommendation emerged regarding government policy. The group strongly advocated for the removal of the existing embargo that restricted Bombay Port to handling only up to 100,000 TEUs. Instead, it proposed increasing the limit to 500,000 TEUs to meet rising demand.[152] They further advocated with reasons for sanctioning the proposal to procure equipment for containerisation at Bombay Port. Also in this report, the Group again made the proposal that the question of shipment of cargo through ports, whether it would be Bombay or Nhava-Sheva, should always be a shipper's *choice* and not the sphere of government intervention. However, considering the growing prominence of Nhava Sheva in container trade, the Group proposed a 40:60 container traffic distribution ratio between Bombay Port and Nhava Sheva, respectively, to balance operational efficiency and regional trade demands.[153]

3.18 Defending the Decline

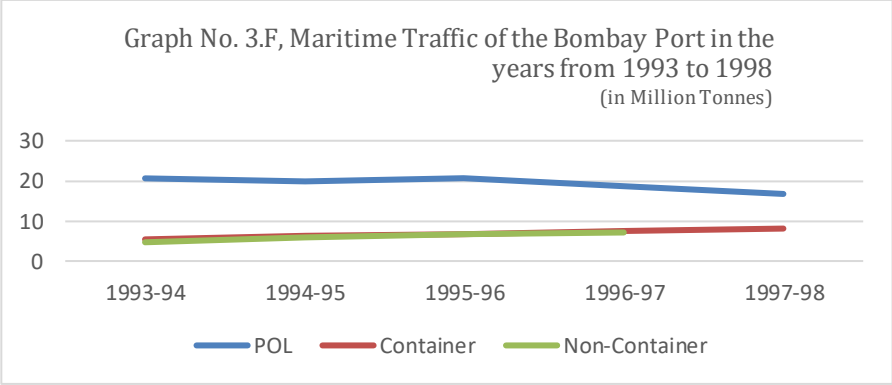
And in the following years, the performance of the BPT in container handling/trade was quite impressive. The newly built port of Nhava Sheva, having all modern and updated equipment and well-backed-up areas, still lagged behind in container handling compared to the Bombay Port in the subsequent years. As stated in the table, till 1998, although the total

[152] Still, the issue of the development of containerisation of Bombay Port faced counterreaction within the Group itself. While discussing the agendas in the meeting, the Chairman of the JNPT made a comment on the feasibility of any further improvement of container throughput at Bombay Port and opined some negative remarks. He stated that although the Bombay Port had played a decisive role in the country's foreign trade, the question of the development of container shipping at Bombay Port should be taken from the welfare of the people of Bombay Island and the city. He proposed that such development could deteriorate the congestion even further. Here he said, "Any further step up in container traffic would run counter to and offend against the spirit and philosophy of decongesting the island city for improving the quality of life of the people inhabiting this island, better known as the commercial capital of India. The enormous amount of investment in several schemes orientated to the achievement of this objective would become counterproductive… ……. If Bombay Port proceeds ahead with its contemplated plan to increase its container capacity, further assuming the odds alluded to above are put out of the way, it will not only put the future of Jawaharlal Nehru Port in jeopardy but also considerably slow down and even halt the march forward on the path of prosperity of the national economy generally and international trade particularly." MPAR/PV/Jan-Mar, 1994/ Board Meeting, 24th May, Annexure 'C' (Comment on Item No.7), 'Optimum Level of Equipment',p, 1136./ P-571

[153] MPAR, 'Report of the Study Group For Export Facilitation In Sea Ports', Op.cit., p. 1115. / P550-51

trade of the Bombay Port had a declining trend, the container trade was progressive. This actually indicated that more and more commodities/cargo were being containerised. Shippers, exporters, and importers preferred to ship their cargo in containers.[154] During this time, railways also became involved in and contributed to the nation's total container business. The newly established CONCOR started container transportation between Bombay and JNPT.[155] However, since 1998, this scenario has changed, and the JNPT has started taking over the Bombay Port in container shipping. This was the time when the JNPT first crossed the 50,000 mark in handling TEUs in a month. This pattern persisted, and Bombay Port was losing both POL and its container cargo. This was evident with the step-down of the position of Bombay Port from the premier position to the fourth position in India. Three factors contributed to this drop. First was the diversion of the major container shipping lines, such as Maersk and APL, which built big-sized ships to catch the advantage of economies of scale in the container shipping business. As JNPT had a deeper draft, they began bypassing their ships from Bombay Port to JNPT. The handling cost of the Bombay Port was linked to the second component, which was the highest of all the major ports in India, and, according to a BPT trustee, the highest in the whole world. JNPT had a low handling cost in comparison. The third one was the growth of some minor ports along the west coast, mostly in Gujarat and Maharashtra. All these factors led to the decline of trade at the Bombay Port.[156]

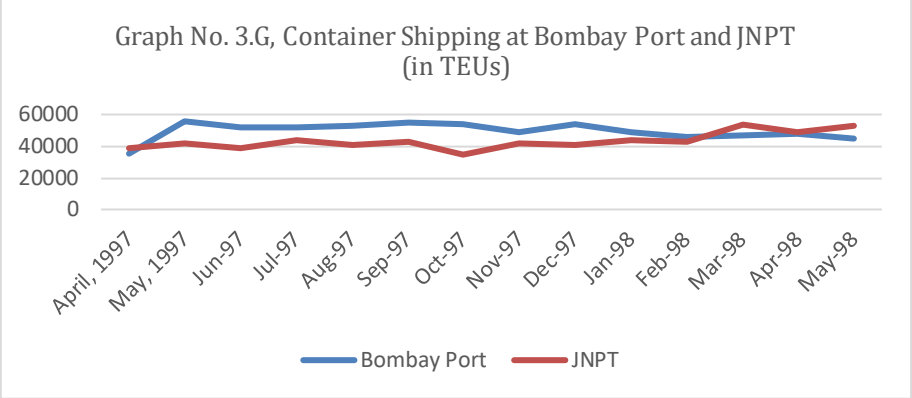
Graph no 3F, Maritime Traffic of the Bombay Port, 1993-1998



[154] MPAR/PV/April-June, 1998, 'Port Traffic-A Cause For Concern', p.19 (627)
[155] MPAR/Proceeding of the Board Meeting, November 1996, T.R No. 341, p. 43. /P592
[156] MPAR, 'Port Traffic-A Cause For Concern', Op.cit., p.20/P628-29

Source: MPAR/PV/April-June, 1998, 'Port Traffic-A Cause For Concern'.

Graph no. 3G, Container Shipping of Bombay Port and JNPT (in TEUs)



Source: MPAR/PV/April-June, 1998, 'Port Traffic-A Cause For Concern'.

Thus, the expansion and development of containerisation at Bombay Port was further aided by this downturn. The Bombay Port authorities took this matter extremely seriously and made every effort to find a way out of this dire scenario. The surviving strategies that were recommended were the purchase of contemporary equipment, lowering handling costs, coordinating with Bombay Port and the JNPT, establishing a marketing division to advertise port amenities to users, leasing container berths to container operators, and even promoting passenger traffic or cruise ships.[157] Further, as JICA[158] in their interim report suggested that Bombay needed 3 deep-drafted open sea berths to handle bigger container ships and thus could handle up to 2 million TEUs. This survey supported the need to procure additional gantry cranes and equipment at Bombay Port and suggested some

[157] *Ibid*, pp.22-23/P630-31

[158] Under the Technical Co-operation Programme, it was decided by the Government of Japan that a study would be conducted for making a Master Plan for the Port of Bombay. Accordingly, in the month of September 1996, a study team from the Japan International Co-operation Agency (JICA) visited the port of Bombay and submitted a 3-volume report to the port authority in 1998. This study examined various socio-cultural and economic conditions of the Bombay Port, identified major problems, and suggested possible solutions. This report contained a Master Plan for the development of Bombay Port and a feasibility report for future development as well as investment. Regarding container traffic, it suggested 8 different alternative plans and opined not for any other development of port facilities for conventional cargo. MPAR, PV, January-March 1999, Excerpts from Proceedings of Meeting, 8th December 1998, TR No. 317, 'Study on Development of Port of Mumbai in India', pp.1,4. /670,73

alternatives to handle containers more efficiently. They further proposed to establish a full-scale new container terminal with offshore jetties, which should have a 13.5-meter water depth so that it could accommodate the third-generation container vessels up to 3000 TEUs lading. Additionally, this survey recommended a specific railway track only for container movement between the docks and CFS. capacity. Furthermore, a special workshop was called for the urgent solution of existing problems of the Bombay Port, jointly organised by the Ministry of Surface Transport, the International Labour Organisation, and Mumbai Port, in which a task force was created for this issue.[159] The trustees of the port also felt for the extension of the docks and the use of Godowns for cargo handling. In order to resolve a number of difficulties in a shorter amount of time, several members also believed that the port board needed to have greater powers to bargain with the worker unions. Also, the need for better management was felt from their side. Some other strategies were the steps to attract more cargo from other areas of Mumbai. Actually, the survey study and the workshop both advocated for a drastic overhaul of the port's infrastructure, as well as the construction of more berths and innovative techniques to handle container business to survive against the tide of time.

3.19 Conclusion

From the establishment of the port trust in 1873 to the start of the 3rd millennium, the Port of Bombay experienced numerous periods of highs and lows, prosperity and hardship, and fluctuations. Whereas the port in colonial India played a vital role in the colonial world economy, after independence, it equally played an important role in the emerging international maritime trade as well as the nation's economic growth. The very port witnessed the growth of the colonial world economy, suppression of Asian shipping, war, depression, the Swadeshi movement, mutiny, independence, expansion of national shipping, and globalisation. All these forces contributed a lot to the growth and development of the port's history. The arrival of containers as well as container ships in the port of Bombay since the 1970s was one of those forces of radical change. It created both structural and technological challenges for the port authority and various groups associated with shipping,

[159] MPAR, PV, July-September 1998, Note of Discussion at the Board Meeting, 28th July, TR No. 208, p.16/P637

such as port users, shipping lines, transporters, stevedores, exporters, importers, their associations, shippers' councils, chambers of commerce, and labour unions. It is also found from this research that the advent of containerisation was welcomed more by the various non-governmental interest groups than the government, and in many cases, the views or policies of the port authority, although it acted as the government body, differed from the national government. This was particularly explicit in the case of containerisation.

Based on our discussions, we can distinguish several phases in the growth of containerisation at the Bombay Port. The first phase started when the first container ship of APL arrived at Bombay Port in 1973. For the first time, the port authority faced the web of global container movement and felt the need to install equipment suitable to handle the boxes. As the sources suggest, the trustees of the port authority were very vocal at the initial stage of containerisation. But this period also witnessed the unwillingness of the national government to make any big investment in equipment, as it was not quite clear to the government about the possible outcome of such a huge investment. This phase continued till 1975 and gradually changed after that. Due to the paucity of equipment, this time the port witnessed some ventures of foreign shipping lines in procuring equipment at their own cost. In fact, the container handling at this stage was entirely dependent on their capacity and arrangements. The second phase started in1975-76 when the government started thinking about investing in containerisation at Bombay Port, but was still unsure about the outcome. The ultimate move was conducting some study/feasibility reports. All these reports, more or less, were in favour of containerisation at Bombay Port. During this period, the port witnessed a sudden spur of container traffic at the port. This was also the time when the port authority was losing revenue due to the decline of food grain traffic through the port. This induced the authority to increase attention to the container traffic to mitigate the ongoing revenue loss. In the third phase, roughly between 1980 and 1985, the port did a better job by establishing fundamental infrastructure for container handling. These include railroad links, CFS, cranes, and so on. From 1985 onwards, the development of containerisation at the port faced several challenges due to the progressive development of Nhava Sheva as a new port entirely created for handling container traffic and also due to environmental issues. The government restricted the limit of container handling capacity of

the Bombay Port, and therefore, any further development or procuring equipment was highly discouraged. This phase ended with the coming of liberalisation in 1992, which focused more on export trade and increased the potential of the seaports. Thereafter, the upper limit was proposed to be removed, and the port successfully handled containers of a bigger number, up to 5 lakh TEUs. This period also witnessed government proposals and grants for equipment procurement, development of CFS, and creation of new berths having deeper drafts. However, since 1998, the Nhava Sheva, or JNPT, has taken over the Bombay Port regarding container handling, and this trend even continued in the subsequent years. This decline was attributed to several factors, which mainly include high handling costs at the port, slow turnaround time, paucity of modern equipment, and low draft of the port, which was incapable of handling large ships. Most of the foreign shipping lines started bypassing the Bombay Port and preferred the JNPT. Here is a quote from the source of Maersk, one of the largest container shipping lines in the Indian Ocean, that can shed light on this issue. The statement came directly from their perspective.

> The Jawaharlal Nehru Port provides computerized and mechanized container and bulk-handling facilities, couples with up-to-date working routines. It has good road and rail connections, and because of its strategical location, it is likely to become an important port in the region and major transshipment point…….the port is a natural harbour so deep that it can accommodate bulk vessels up to 70,000 DWT and large container vessels.[160]

The aforementioned comment conveys the perspective and impression of the container shipping companies regarding JNPT at that time. This shipping line, which traded containers with the Bombay Port, now started calling at JNPT. In fact, the Master Plan developed by the Japan International Cooperation Agency (JICA) for the future development of Bombay Port explicitly indicated that shippers and port users have begun to favour JNPT over Bombay Port. Ultimately, the Bombay Port Authority recognised the future of the port and began concentrating more on other possible aspects of future developments. Thus, the duality of concurrent forces—constraint and possibility— affecting maritime trade and containerisation that marked the Bombay Port's trajectory at the close of the 'short' twentieth century was eloquently captured in a speech delivered by one of the

[160] Maersk Post, 4/1991, p.13.

trustees during the port's 125th anniversary celebrations—a moment that encapsulated both retrospection and a forward-looking vision for Bombay Port for the third millennium:

> The port, since its inception in 1873, has contributed immensely towards the development of the national economy inter-alia transforming Mumbai city into a megapolis and the commercial hub of India. The induction of fully integrated multi-purpose port handling facilities, associated infrastructure, vision, dedication and commitment of the staff has made it possible for the Mumbai Port Trust to have achieved the pioneer status with heritage and culture. I am sure that with such resources the Mumbai Port Trust is all geared up to enter into the challenging needs of the 21st century.[161]

[161] MPAR/ PV/ Special Board Meeting, 3rd July 1997, T.R.No. 225, 'Historic first meeting of the Board in the 125 year of the Mumbai Port Trust', p.6.

CHAPTER - 4

Between the Box-Wind: Containerisation in the Port of Singapore

CHAPTER BRIEFING

This chapter discusses the growth, development and expansion of containerisation in the port of Singapore and its impact on the economy and trade of the country. This survey explores a general history of Singapore since the thirteenth century to 1819 when it emerged as a free port, some basic history of Singapore's economy after World War II, its rise in the world economy and, in particular, the rise of Singapore as the busiest container port in Southeast Asia. Since the 1960s, after the establishment of Singapore as an independent state, it began to focus more on the development of its exports, and thus, the port received topmost attention as a tool for increasing export potential. But until 1980, the condition of Singapore's port was not satisfactory to the shippers. However, the port authority faced spontaneous upward trends of container shipping, mainly imports, and thus suggested that the government should allow some special privileges to the maritime sectors for the better improvement of the country's ocean shipping. Since 1980, container shipping has received topmost priority from the port and government, and it was during this time that Singapore started receiving giant loans from international development institutions. alike India, at its initial stage, even the World Bank was unsure about investing in container facilities in Singapore due to the fact that such a big investment would never bring a positive return. But in reality, Singapore received topmost attention from world shippers and shipping companies due to its geographical location. The government welcomed private investment in the port sector, and its result was very satisfactory, as within a few years, Singapore replaced some other regional ports as a hub of container trade. The direct impact of the growth of container trade was also the changing nature of government policy on trade. It is found that the container trade helped PSA retain its position in global shipping till the end of the century.

- **Singapore: A History of the Port and the Island— Preparing for a Metal Box— The Dual Forces Intertwined: Export-Promotion & the Box-Ships—Dual Shift International Collaboration—Export Promotion Expanded—Industrialisation—Shipping and Containers—Liberalisation and Containers—Road to the New Millennium—Conclusion**

CHAPTER – 4

4.1 Singapore: A History of the Port and the Island

Venice's response to early globalisation sparked commotion for the discovery of the New World well before the Age of Discovery. Soon after the voyages of the Polo brothers, another enthusiastic merchant based in Venice set forth to uncover the people and islands of Asia through the Silk Road. On his return from China, however, adverse weather and natural hazards forced his vessel to remain temporarily in the maritime straits of Southeast Asia. Despite this detour, Marco Polo—later dubbed "Marco Milioni"[1] by his fellow Europeans for his extravagant tales of Asian wealth and populations, made scant reference to any major port city in the Indonesian archipelago. His accounts of Southeast Asia remained largely confined to ethnographic notes and descriptions of local fishing practices.[2] Over a span of two centuries, another traveller, this time from Portugal, recorded the thriving commercial life of a port city in Southeast Asia. Tome Pires was probably referencing the port city of Singapore in the sixteenth century. Thus, although lying in between one of the most prominent and busiest maritime trade routes in Southeast Asia, Singapore—the 'pride of the East,' or 'City of 'Palaces'—did not get its commercial ground until the thirteenth century, when some positive socio-political and economic forces came to change its trajectory.

In the majority of narratives concerning Singapore's history, authors tend to start the discussion from 1819, focusing on the establishment of Singapore as an entrepot by the English as a starting point of its history, thereby detaching its pre-colonial connection from the modern development. Even some official publications by the Singapore government paid scant attention to the city's past while emphasising much more on development in the days of colonialism. A notable example is the *Yearbook of Singapore*, published by the Ministry of Communication, which spent a few words on its early history, rather than

[1] Joseph De Somogyi, *A Short History of Oriental Trade*, (Georg Olms Verlag: 1998), p.77.
[2] *The Travels of Marco Polo*, edited by Hugh Murray, (Edinburgh: Year of Publication unknown), pp.281-82.

focusing more on its colonial and postcolonial development.[3] This marginalisation is explicitly cited in Professor Wong's work, who is a notable historian of Singapore. He noted, "Singapore had no strategic naval significance until Britain, as the growing dominant naval power in the early nineteenth century, thought it necessary to have a place that could simultaneously command the Archipelago approaches to the Indian and Pacific Oceans."[4] However, modern scholars go against this claim and tend to push its history date back to the thirteenth century when Singapore was taking shape as a settlement and strait in the nexus of maritime Southeast Asia.[5] In an excellent pen stacking research article, Professor Peter Borschberg and his student Benjamin J. Q. Khoo of the National University of Singapore presented numerous evidence that boldly support Singapore's early history since the thirteenth century.[6] Their discussion revolves around three types of primary sources: archaeological, literary and cartographic, all shed light on its early history well before the British establishment.

Among them, archaeological remains perhaps perform better than others to clear the scepticism on Singapore's precolonial past. Formally, this trend started with the arrival of Europeans in Singapore who, in many testimonies, acknowledged the historical

[3] National Archives of Singapore (Hereafter NAS), *Singapore Yearbook*, Published by the Ministry of Communication and Information (hereafter MCI), Government of Singapore, 1971, pp.30-33. Also see Peter Church (ed). *A Short History of South-East Asia*, (Singapore: John Wiley & Sons, 2009), pp.142-155.

[4] Peter Borschberg, 'Singapore's Historical Journey toward a Global Trading Hub: An Introductory Overview', Conference Paper, Singapore Management University, January 2016, p.2.

[5] In modern times, scholars and researchers, along with some Singapore-based institutions such as the National Museum, published several monographs, research articles, books and reports which boldly support a vibrant story of its past since ancient times, long before the foundation of modern Singapore by the British. Two works are noteworthy. The first one is a monograph by Malcolm Murfett titled *Between Two Oceans: A Military History of Singapore From 1275 to 1971*, published in 2011, which presented a lucid history of early Singapore, a concise but detailed narrative of the island since the thirteenth century and how it got its modern name. This book identified six separate stages of Singapore's history before its modern foundation in 1819. These are: *Srivijayan era, Malayu-Jambi phase, Classical phase, Melaka phase, Johore-Riau phase and Dutch-Bugis phase*. The second one was the secondary textbook on Singapore's social and economic history developed by the 'Curriculum Development Institute', under the Aegis of the Ministry of Education. This textbook offers us the illuminating history of Singapore since precolonial times based on numerous literary sources, testimonies, travellers' accounts and local tales. Also, Peter Borschberg in his research article 'The Singapore Straits in the Latter Middle Ages and Early Modern Period' published in the *Journal of Asian History* in 2012, detailed several explanations and representations of the toponym *Singapura* derived mainly from a large section of early modern historical sources.

[6] Peter Borschberg and Benjamin J. Q. Khoo, 'Singapore as a Port City, c.1290–1819', *Journal of the Malaysian Branch of the Royal Asiatic Society*, Vol. 91, No. 1 (314), June 2018, pp. 1-28.

significance of this island. A notable example goes with its founder, Sir Thomas Stamford Raffles, who first traced its remains. Another Englishman, Captain Danial Ross, pointed out its proximity to be a royal heritage in ancient times. John Crawfurd, during his reign as the second British resident of Singapore, gave reference to sites having the value of historical material culture. However, the real impetus came when, in 1984 the Fort Canning was officially opened to the public and researchers for further excavations. Surprisingly, 30,000 artefacts were discovered at this site, which were of fourteenth-century origin.[7] Therefore, Fort Canning excavation created stimuli among the researchers of Singapore's past, and there were other sites excavated eventually. Two more sites, the Parliament House and Empress Place, were excavated in 1994 and 1998, respectively, where a vast number of artefacts, which include Chinese porcelain, coins, stoneware, and some Vietnamese blue-and white ware, along with bones, were found. But the most dramatic excavation that the world academia, as well as Singaporeans, witnessed was carried out in 2015 when a 100-day dig project was conducted at the Empress Place, from which artefacts of approximately three metric tonnes of volume were discovered. All these remains were of origins ranging between the thirteenth and the sixteenth centuries. After a detailed examination of these remains, some researchers assumed that Fort Canning would have been a monastery, while the Old Parliament House was a thriving commercial place.[8]

Out of the realm of archaeology, which aided the narrative of Singapore's precolonial past, other actors, such as contemporary literature, which included travellers' accounts, diaries, merchant testimonies, memoirs, and, to some extent, the early modern cartographs, also struggled to push the island's historical dating back to the thirteenth century. Almost all Chinese sources, mostly court documents, and a few Arabic accounts repeatedly mentioned Singapore as a thriving port city. Two sources are mostly referred to. One is the *Overall Survey of the Star Raft,* a Chinese text developed by Fei Hsin, who, as a soldier, was accompanied by Admiral Zheng He's naval voyages in the Indian Ocean in the first half of the fifteenth century. The other one is the *Muhit*, written by Seydi Ali Reis, an Ottoman admiral in the fifteenth century. While the Chinese sources explicitly mentioned

[7] *Ibid.*, p.3.
[8] *Ibid.*, p. 4.

the port and settlement of Singapore, the Arabic sources have names of phonetic similarities with Singapore, such as *Singafur,* or *bandar Singafur* (probably a toponym).[9] There was also a section of Malay and Javanese literature that mentioned the thriving economy of Singapore, such as the common and most-referred source *Sejarah Melayu* (commonly known as the *Malay Annals*).

Vasco Da Gama's footprint on the coast of Malabar fetched rivalry among the European maritime powers not only in the subcontinent, but it also spread to the Southeast Asian waters. Soon after the departure of Gama from the Indian Ocean, Albuquerque, the Portuguese admiral, made an attempt to extend the wings of the Portuguese crown to the straits of Southeast Asia. But soon after the establishment of the VOC, or the Dutch East India Company, the Portuguese started continuously losing their influence in the region, facing threat from their Dutch counterpart and consequently, by around 1641, lost their control over the spice island and the Straits of Malacca. Till the beginning of the seventeenth century, the British interest in the island of Southeast Asia was nominal; this was evidenced by the formation of the Treaty of Anglo-Dutch Defence in July 1619, which temporarily mitigated the agitation between the Dutch and the English.[10] The English instead drew attention to their Indian territory, except Bencoolen, which remained as their sole base in Southeast Asia. However, this proved to be a temporary halt when the growing trade with China in the eighteenth century altered the whole scene and turned the British apathy into burning interest in Southeast Asian straits almost overnight. This was the time when the presence of the Dutch influence in Southeast Asian waters propelled the English to think about setting up a seaport at the south of Malacca, which could serve their commercial as well as political or defensive interests, a motive, as an Englishman perfectly said, "we must set up shop next to the Dutch".[11] But again, Singapore was not their first choice. A series of attempts to establish a suitable port at Semangka Bay, Callambyan Bay, Palembang and Padang respectively until 1819 by Sir Thomas Stamford Raffles, the then

[9] *Ibid.*, p. 6-7.
[10] NAS/MCI/ *Singapore Yearbook,* 1971*,* p.31.
[11] Walter Makepeace, et.al(eds), *One Hundred Years of Singapore: being some account of the capital of the Straits Settlements from its foundation by Sir Stamford Raffles*, Vol. 2, (London: name of publication not mentioned, 1921), p.23.

Governor of Bencoolen, only depicted Singapore's marginal status to the EIC. Raffles's next choice was Rhio, for which he went to Calcutta to take permission from Lord Hastings, but ultimately, he failed again, because the Dutch already took possession of Rhio just before Raffles returned from Calcutta. But this did not stop him from going further. To secure a suitable place for a port, Raffles again travelled a lot of places with Major Farquhar and ultimately reached the island of Singapore on January 29, 1819.[12] Perhaps for its geography and location, Singapore became their logical choice. The logic was, however, simple to Raffles: "One free port in these seas must eventually destroy the spell of Dutch monopoly".[13] To make his will ultimatum, Raffles went through many political stages, and finally established their port as well as a base in Singapore.[14]

The years following the establishment of the British base, Singapore developed both as a vibrant seaport and colonial settlement. Its initial picture of progress can be explicitly portrayed when Raffles wrote a letter to his cousin in 1820, in which he expressed both of his experience, expectations, and prediction about the infant city: "Singapore continues to thrive most wonderfully, it is all and everything I could wish, and if no untimely fate awaits it, promises to become the emporium and pride of the east."[15] Within years, Singapore's

[12] NAS/MCI/ *Singapore Yearbook,* 1971*,* p.32.

[13] Charles Burton Buckley, *An Anecdotal History of Old Times in Singapore*, Vol.1, (Singapore: Fraser & Neave, 1902), p.6.

[14] In most cases, 1819 is considered the founding year of Singapore, especially for its modern history. However, this stereotype of paying utmost importance to the EIC, or more specifically, Sir Raffles, which we generally study in conventional historical narratives about Singapore, undermines some of its regional or local elements underlying this founding process. It was not an easy shortcut process of its foundation that proved to Raffles. After the arrival of Raffles on the island, he undertook a series of treaties—or what may be called an adjustment—with the local lords/owners of the land. Here, Sir Raffles made his first attempt to negotiate with Dato Temenggong, a local owner, on January 29, 1819, which granted him nominal rights to set up a station there in exchange for an annual payment of $3,000. Within a gap of seven days, another treaty was signed, this time with another local lord named Sultan Hussein, by which the British occupation in this island became more firmly established. A third treaty was signed in June 1823 between the Company and the Sultan Hussein and Temenggong, which allowed the Company total control of trade in Singapore, and in return, the Company agreed to pay pensions to them. Finally, in August 1824, the Company signed a fourth treaty by offering enhancement of the pensions and cash payment, which made the EIC the ultimate owner of this island. On the other hand, the Dutch, although they got anxious in the initial phase about the British occupation of Singapore, largely due to the expectation that it might undermine the importance of their maritime base, finally recognised it in the Anglo-Dutch Treaty of 1824.

[15] Charles Burton Buckley, *An Anecdotal History of Old Times in Singapore*, *op.cit.*, p.8

maritime trade increased on a substantial scale and by 1822, it moved ahead of Penang,[16] by which time its generated revenue was capable of sustaining its cost of administration.[17] The port, however, gradually changed its working dynamics from an entrepot to a free port. This credit first goes to Raffles, who, since its foundation, has taken every step to make it. Since its foundation, Raffles's prime concern was to make Singapore a place of free trade and commerce. In his own words, "Singapore will long and always remain a free port, and that no taxes on trade or industry will be established to check its future rise and prosperity, I can have no doubt."[18] To make it, Raffles's initial time was devoted to setting up a constitution that would act as a safeguard for free trade and prosperity of the island, as well as to the fruition of his prime motto of "utmost possible freedom of trade and equal rights to all, with protection of property and person."[19] However, his primary concern in Singapore was trade and commerce, unlike in Java, where his efforts were paying off through the development of agriculture.[20] Singapore was perhaps the first *free port* in the whole British Empire in the nineteenth century.[21] Singapore's evolving trade, and partly due to its nature as a free port[22], had an adverse effect on the neighbouring Dutch ports of the Southeast Asian straits, and practically what the early Dutch officials had already feared or predicted finally came to be true. Within years, Singapore succumbed to the maritime traffic of Rhio, a Dutch port in the Indonesian archipelago. The local

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[16] NAS/MCI/ *Singapore Yearbook,* 1971*,* p.32.

[17] *Memoir of the life and public services of Sir Thomas Stamford Raffle*s, (London: J. Murray), p. 532. Raffles's assumption that Singapore would be the 'pride of the east', came to pass soon after its foundation. It established itself as the most prosperous British colony in Southeast Asia. The data about its capital may support this assertion. Within 1822, just three years after its foundation, the capital it turned yearly crossed eight million dollars, far more than Bencoolen, which was capable of turning capital of less than 400,000 dollars annually. Moreover, public expenses were at the top in Bencoolen than in Singapore, a 12:1 ratio proportionally.

[18] Quoted in Walter Makepeace, et.al(eds), *One Hundred Years of Singapore, op.cit.*, p. 577.

[19] *Memoir of Sir Thomas Stamford Raffle*s, *op.cit*., pp. 525-26.

[20] *Ibid*., p.526.

[21] This is further evidenced by the fact about the early trade pattern of Singapore. For example, a total of 2,889 ships traded with the port of Singapore within just two and a half years since its foundation by the English, out of which only 383 were Europeans. Ref. Walter Makepeace, et.al(eds), *One Hundred Years of Singapore, op.cit.,* p. 24.

[22] Since its foundation, there have been tremendous efforts to keep Singapore a free port. However, this credit, after Raffles, mostly goes to the local merchant communities who went so deep in making this true by repeatedly raising their voice for it, what more explicitly noticed in 1830 when they met the Governor-General of India during his visit to the port, and demanded that the American vessels should be permitted to trade with Singapore. Their request was not kept on hold. Within five years of intermission, Singapore Port witnessed the anchorage of some American ships.

traders, mostly Chinese in and around Rhio, started preferring Singapore port for shipment of their products, and by 1833, Rhio completely declined, with no commercial activity being noticed by contemporaries.[23] A contemporary observer's remark about the success of Singapore as a port reflects the disparity in trading policy between the English and the Dutch as follows:

> Singapore owed its prosperity as much to the ill-advised measures of the Dutch as to the sagacity of Sir Stamford Raffles; it was the strong contrast between Dutch rapacity and English liberality which told in its favour. In former years the Dutch loaded all the native traders with heavy harbour dues and all sorts of exactions; but they have now in some measure thrown open their ports, and are endeavouring to rival us in liberal offers to native traders.[24]

Professor Peter Borschberg identified several political, economic, and technological factors for the excessive growth speed of the Singapore port in the nineteenth century.[25] The French Revolution and the Napoleonic War had a drastic effect on Dutch power, which ultimately led to a decline of its monopoly over the spice trade. Singapore's central position between the trade routes of three great markets—Europe, India and China— kept it prosperous over the years, especially during the high noon of English-China trade. Commercially, as Professor Borschberg argued, the principle of laissez-faire in the international economy in the nineteenth century, followed by the dissolution of the Chartered Act in 1813, which ended up with the monopoly of the EIC in Asian trade, brought new winds to Singapore's sail, making it the destination of merchants and private traders of all nations. And technologically, it was the Industrial Revolution that added further impetus to its radical growth. The development of railway networks in the Malay Peninsula increased port-hinterland connection, while the growth of marine telegraphs, as well as steam navigation, connected Singapore with the worldwide webs of information and market economy. In between, the opening of the Suez Canal in 1869 increased the importance of Singapore as a trans-shipment port between the eastern and western

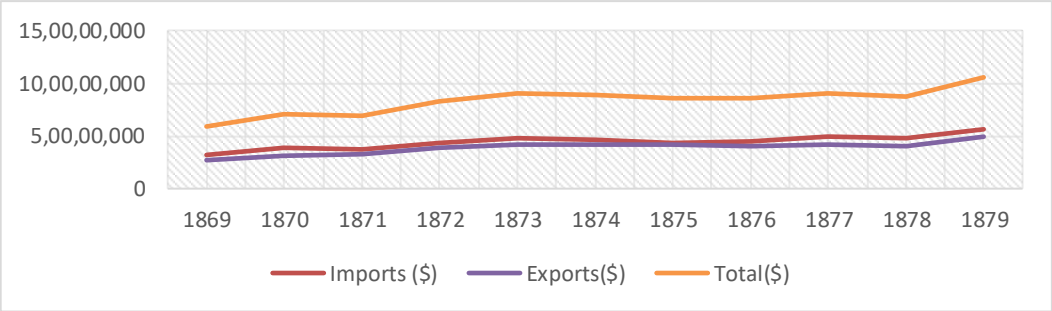
[23] *Ibid.*

[24] *Ibid.*, p.31.

[25] Peter Borschberg, 'Singapore's Historical Journey toward a Global Trading Hub', *op.cit.*

hemispheres.[26] Ships of European nations, other than the British, showed a rise in their frequency in visiting the port of Singapore after the opening of Suez. This proposition is well fitted with the case of France, as the number of its vessels that visited the port in 1879 was three times more than in 1869, while the value of its imports to Singapore also increased by 75%.[27] However, Singapore was prepared well in advance to cope with these changes and to handle the evolving volume of international oceanic trade well before the opening of the Suez. Within a decade or two following 1850, several improvements took place in maritime sectors, such as improvements and extension of the New Harbour, while the construction of two additional docks, Pulo Brani and Tanjong Pagar, added further stimulus to the overseas trade of Singapore. Furthermore, good communications between the harbour and the town had been established, and new Port rules, along with setting up Shipping Offices, were devised to uphold 'good order' in Singapore shipping.[28] This flourishing trade and commerce continued unprecedentedly in the next decades. It was not until the coming of the Great Depression of 1929 which had a drastic impact on the maritime trade of Singapore since the trade of Malayan tin and rubber declined internationally at this time.[29]

Graph No. 4A, Value of Imports and Exports in Singapore, 1869-1879



[26] Straits Times, a Singapore-based newspaper, was perhaps most sanguine about the good that the opening of the canal might fetch to Singapore's trade and commerce: "it is to the Suez Canal, however, that we look as the agency which is to quicken trade, and to increase the importance of Singapore as a commercial centre and a port of call." Quoted in George Bogaars, 'The Effect of the Opening of the Suez Canal on the Trade and Development of Singapore,' *Journal of the Malayan Branch of the Royal Asiatic Society*, *Vol. 28, No. 1 (169)*, March 1955, pp. 99-143.

[27] *Ibid.*

[28] NLBS/ Report on the progress of the Straits Settlement from 1859-60 to 1866-67, Singapore, Straits Government Press, 1867, p.10.

[29] *Singapore: an illustrated history, 1941-1984*, (Singapore: Information Division, Ministry of Culture, 1984), p.12.

Source: George Bogaars, 'The Effect of the Opening of the Suez Canal on the Trade and Development of Singapore,' *Journal of the Malayan Branch of the Royal Asiatic Society*, *Vol. 28, No. 1* (169), March 1955, pp. 99-143. (Graphical representation made and tabulated by the author)

While earlier regimes privileged the strategic location of a port as the topmost criterion, the advent of the steamships fundamentally deflected this priority. In this new technological order, the availability of fuel—particularly coal—near a port emerged as a decisive parameter. It not only reflects how the changes in maritime policy were entangled with the evolving wings of colonial empires, but also shows how the ports were being deeply embedded within imperial energy networks. Singapore's success in establishing itself as a coal station, along with other components such as tin, rubber, and offering services such as brokers, bankers, shipbuilders, and cheap labour, made it the first choice of the port of call for world merchant ships. Singapore became more connected with the world at the time of World War I, since it was the world's largest marketplace of *gutta*, a particular natural product which was extensively used in telegraphic communications. Demography of Singapore also expanded in tandem with the annual growth of trade and commerce, mostly attributed to heightened immigration,[30] for which its founder described it as "a great and flourishing city".[31] Along with the increase in population, urbanisation entered its mature phase. In 1840, Sir Edward Belcher, when visiting the Singapore Port, was enchanted by the beauty of the town flourishing with buildings, large palaces, government houses, offices, and private residences, for he predicted that it would soon be called the 'City of Palaces.'[32] However, Singapore, due in part to its status as a free trade station/transhipment centre, retained a full cosmopolitan city where Chinese dominance was still not established till the end of the nineteenth century.[33] The census of 1891 of the Straits Settlement portrayed information about a sufficient number of European,

[30] Peter Borschberg, 'Singapore's Historical Journey toward a Global Trading Hub', *op.cit.*

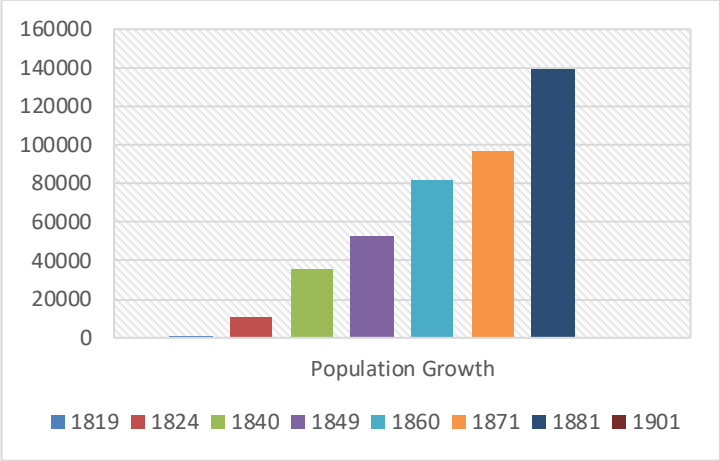
[31] Walter Makepeace, et.al(eds), *One Hundred Years of Singapore, op.cit.*, p. 24.

[32] Sir Edward Belcher, *Narrative of a Voyage Round the World Performed in Her Majesty's Ship Sulphur, during the years 1836-1842*, (London: 1843), pp.130-31.

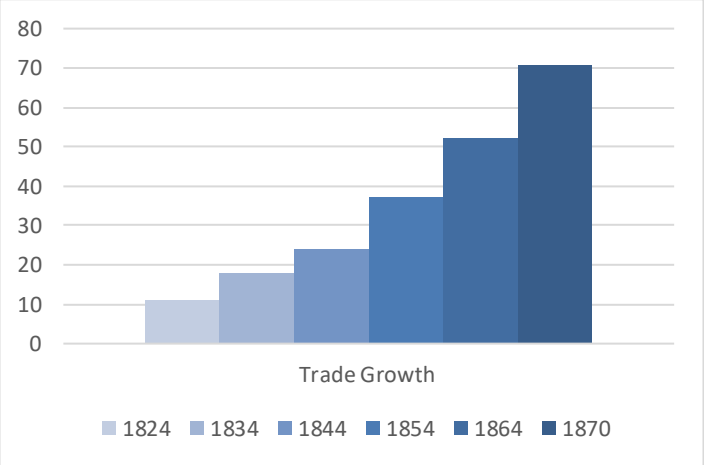
[33] By 1901, the proportion of Chinese in Singapore's total population grew to 72%. This further increased, especially after 1911 when the Republic of China began directly influencing the Chinese population in Singapore by sending teachers, establishing schools, giving aid for printing Chinese textbooks, etc.

American and Asian populations in considerable numbers, and they even had a rising trend.[34]

Graph No. 4B, Value of Imports and Exports in Singapore, 1869-1879



Graph No. 4C, Growth of Trade in Singapore, 1824-1870 (in million-dollar value)



Source (Graph No. 4B & 4C): National Archives of Singapore, *Singapore Yearbook*, Published by the Ministry of Communication and Information, Government of Singapore, 1971, p. 34; *Social and Economic History of Modern Singapore*, (Singapore: Curriculum Development Institute & Longman Singapore Publishers (Pvt) Limited, 1989), p. 30; *:* Saw Swee-Hock, 'Population Trends in Singapore, 1819-1967*', Journal of Southeast Asian History, Vol. 10, No. 1,* Singapore Commemorative Issue 1819-1969 (Mar., 1969), pp. 36-49

[34] NLBS/ Report on the census of the Straits Settlements, taken on the 5th April 1891, pp.2,10.

Administratively, Singapore went through many stages. Since its foundation in 1819, Singapore acted as a Residency of British colony, initially controlled from Bencoolen until 1824 when along with other two Residencies, Penang and Malacca, became a political unit what often been called 'Straits Settlement', controlled from and was responsible directly to the Governor Council of East India Company in India, in which, the Chief of Singapore acted as the Governor of all three residencies. This was continued till 1867 when the Straits Settlement became a 'Crown Colony', and the entire control was transferred to the Colonial Office, London.[35] But it was World War I, which made circumstances in favour of Singapore, and began treating it as an exclusively separate political unit. Japan's tremendous rise in the Indo-Pacific region propelled the British to seek to develop Singapore as a suitable naval base in the east. How Singapore was crucial to Britain from the strategic point of view can be explicitly documented when, in the Imperial Conference of 1937, it was officially stated: "In the Far East the security of Australia, New Zealand and India hinges on the retention of Singapore as a base for the British."[36] Ultimately, care and support were received from London, with the arrival of the *Prince of Wales* and *Repulse* (two battleships/battlecruisers) in Singapore. Singapore was regarded as an "impregnable fortress" with a view that it could defend against any attack, both from land and sea. [37] However, it was unable to retain its status as a fringe of Britain's Asiatic empire; it was finally occupied by Japan on February 15, 1942. This was due to the reason that the Japanese invaded Singapore from the land side, not from the sea side, as was anticipated. To Winston Churchill, the fall of Singapore was "the worst disaster and largest capitulation in British history."[38] Japanese occupation continued three more years, until the arrival of the South-east Asian Command under Lord Mountbatten, who recaptured Singapore on September 5, 1945. In the next seven months, Singapore was governed by the British Military Administration, a time when it was felt to separate Singapore from Malaysia and

[35] NAS, *Singapore Yearbook,* 1971, p.33.
[36] *Ibid.*, p. 35.
[37] *Singapore : an illustrated history, 1941-1984*, *op.cit.*, p.15.
[38] Quoted in, Ong, C. C, Review of *The Singapore Naval Base and the Defence of Britain's Eastern Empire, 1919-1941*, by J. Neidpath. *The International History Review, 4(2),* 1982, 307–310.

make it an independent unit.[39] However, wartime effects, many political and regional forces, and decolonisation all went against the vibe of Singapore's separation and made this journey quite arduous. It was on August 9, 1965, when an independent, sovereign, noncommunist, and democratic socialist Singapore finally came into being. In this prolonged struggle, two forces caused the birth of a separate independent Singapore: first, its strategic importance and the various political problems it raised, and second, the decline of the power of the Sultan in the Malayan Union and the growth of Chinese influence.[40]

4.2 Preparing for a Metal Box

PSA's concern about containerisation appeared first after the conference of the International Association of Ports and Harbors (IAPH), which was held in London in 1965. Soon after the conference, PSA established/formed a special Container Committee in 1966 with the twofold purpose: to investigate the new pattern of cargo handling and make recommendations for setting up a container terminal in Singapore.[41] The report of the committee, submitted within two months, prescribed for installation of two container cranes having a 45-50 ton capacity.[42] Compared to other Asian ports, the Port of Singapore Authority's forecast that containers would arrive in the near future turned out to be far more accurate than previously thought. This was demonstrated by the numerous planning and development works that began in the year 1967, which was two years before the period of time in which the PSA was confronted with a significant rise in the number of containers coming to the ports. This time, combi ships, which carried both conventional and unitised cargo, started visiting the port of Singapore. In 1968, PSA handled 4,800 containers.[43] Unlike other Asian ports, the PSA took a full-fledged initiative to handle the container trades for the sake of interest of the shippers and the shipowners. This includes various

[39] NAS/MCI/ *Singapore Yearbook,* 1971, p. 36.
[40] *Ibid.*, p. 37.
[41] Port of Singapore Authority (hereafter PSA), *Proceedings of the First Container Seminar*, 4th & 5th August 1970, Loh Heng Kee, 'PSA Enters the Container Age', p.10.
[42] *Ibid.*
[43] *Ibid.*, p.12.

administrative setups, upgradation works, modernisation programme, developing infrastructure and warehousing capacity, and even ad-hoc facilities for containerisation.[44]

In addition to the main development projects, the PSA made some strides in other smaller sectors, such as policing, security, power, and fire service. For example, at the beginning of 1965, a brand-new Snorkel Fire Engine that cost $125,000 was delivered and placed into duty. This particular engine was the first of its kind to come to this nation. Throughout the course of the year, the Brigade responded to a total of 155 calls. Also, the Authority was responsible for the field of Oil Services, which included the bunkering and loading of bulk oil as well as the discharge of tankers throughout the year 1965. In total, around 2,561 operations were handled by the Authority. The same kind of progress may also be seen in the fields of electricity and electronics. The total quantity of electrical energy that was acquired for distribution across the Authority's system in 1965 was 31,663,100 units. The majority of the electrical energy that was utilised at the Authority's two dockyards, which were located in Keppel Harbour and Tanjong Pagar, amounted to 16,043,891 units. A total of 1,865,900 units that were utilised were provided to vessels that were undergoing repairs at the dockyards.[45] These facts further support the increasing usage of PSA's docks to utilise shipping and trade activities. In addition, diesel alternator standby sets with a capacity of 4 kilowatts were set up in order to guarantee that the PSA's Police Station, Pilot Superintendent's Office, and Telephone Exchange would always have access to an uninterrupted supply of energy under all circumstances. Even two portable silicone rectifier sets were bought and put into service at the dockyards as part of the PSA's

[44] Shipowners' response towards containerisation, especially its feasibility in Southeast Asian seas, was dubious in nature. For instance, a president of a shipping company, operating at the port of Klang in Malaysia, expressed the opinion that he was quite unsure about the economic outcome of containerisation, and that it might prove to be a "danger" to the economy of his company. Ref. National University of Singapore (hereafter NUS), Transport Symposium 1979 Proceedings, *Transport for the People*, 'Organised by Transport Students' Society, School of Business and Management, MIT Shah Alam, 'Handling of Containers-The Experience of Kelang Port Authority,' p.3.

[45] NAS/MCI/ *Singapore Yearbook,* 1965, p.345.

efforts to improve the port's cargo handling efficiency. These units helped convert alternating current to direct current, which powered ships.[46]

While every effort was made to keep the port out of any technical backwardness, other areas, such as improving its security, were also taken care of. For example, beginning in 1965, the Police Force of the Port has taken every precaution to ensure that the Port complex is under the highest surveillance, and a general increase in the level of security across the whole port region has been imposed. There was an increase in the frequency of spot inspections, and mobile patrols were made more intense. As a strategic move for maintaining tight security, a total of 390,658 cargoes were checked out at the Gates during the period under review. This endeavour further extended to the duties and work of the Marine Section of PSA. A total of 1,490 inspections were performed by the Marine Section on harbour vessels that were located along the seaward border of the Authority.

A. Infrastructure

But much appreciated work done by the PSA was the utmost focus it paid to develop its physical and mechanical infrastructures with the sole purpose of making the port of Singapore one of the best and efficient seaports in Southeast Asia, as well as the world in cargo handling. Installing a highly efficient crane and other allied infrastructural facilities was the basis prerequisite for that. However, in order to pay for the importation of equipment, Singapore required foreign currency/exchange, which was a problem that practically every emerging nation in the post-colonial world went through. As an infant sovereign nation-state, Singapore at that time was not an industrialised country, and this was always reflected in its regular imbalance of trade. But PSA remained resolute in its commitment to accomplishing the objective. In the end, this issue of capital was resolved when, on August 11, 1966, the PSA signed a Loan Agreement with the World Bank for an amount that was equivalent to 15 million dollars. The purpose of this agreement was to finance the foreign exchange cost of major port development projects as well as the purchase of craft and machinery that were necessary for efficient port operation. These

[46] *Ibid*, p. 346.

projects were part of the Authority's 130-million-dollar development programme of the period 1966-1970, in which the further development of the East Lagoon was considered the topmost priority by the PSA. It was anticipated that after this project was finished, it would be able to produce around 55 acres of reclaimed land, four new deep-water docks, a breakwater, and other auxiliary amenities at an estimated cost of approximately 70 million dollars. Reclamation work reached an advanced stage during the year and was expected to be completed by late 1967.[47]

Meanwhile, plans for the construction of the four new berths were almost finalised. Additionally, in order to keep up with the most recent advancements in the shipping industry, there was a consideration being given to the creation of terminal facilities that would be able to accommodate container ships that the PSA anticipated would call at the port by the year 1970. Before the specifics of these facilities were known, a comprehensive investigation had already commenced to ascertain the precise requirements. The Port Engineer's Departmental activities were centralised through the construction of a Plantyard with a cost of 1.7 million dollars, which began in 1965 and was completed by the end of 1966. This Plantyard was located at Blangah Bay and consisted of an office complex, workshop, building and stores. The efficacy and economy of the Port Engineer's Department's operations were anticipated to be significantly enhanced by centralisation in this manner.[48]

However, it seems that such arrangements were perhaps proved to be considered insufficient by the Singapore Port Authority to meet the needs of that time. This was reflected in the extension of other improvement works done in the same year. Many other relevant facilities were set up especially for goods storage. To offer more storage space, a massive 780-by-120-foot godown was built at the West Wharf in February 1966. Orders for the supply of one heavy truck-mounted crane, two waterboats, one fast operational launch, and two harbour and estuary tugs were also placed during the year, coupled with the addition of 41 new forklift trucks, together with eight mobile cranes and two long

[47] NAS/MCI/ *Singapore Yearbook, (*several years)
[48] NAS/MCI/ *Singapore Yearbook,* 1966, p.371.

jib/tower cranes, with the purpose of boosting the mechanical capacity of PSA's fleet. In addition, plans were made to replace the current temporary location at Kallang with a permanent dangerous goods landing facility on the West Coast.[49] It was the Authority's intention to implement all of these initiatives in order to sustain its high standard of operating efficiency, to keep up with the expansion of traffic, and to speed up the turnaround time of ships in the Port. The above improvements explicitly demonstrate the motto of the PSA: "to ensure that Singapore's port facilities and services are efficiently and economically maintained and developed to the fullest extent and in a manner commensurate with its role and position as premier port of international standing in South East Asia."[50]

Setting up the facilities that were essential to preparing a seaport for containerisation was the next phase that the PSA paved with the utmost care in the port development programme. This basically started with providing wharf and shore facilities at the port. The next was the Second Phase East Lagoon Project of PSA, which was undertaken mainly to provide a cross-berth of 700 feet, especially for feeder service container vessels (apart from two exclusive container berths for ocean-going vessels). The PSA was planning to install shore-based container cranes.[51] However, for conventional vessels and combo ships[52], the PSA planned to provide them with transit sheds. In reality, both the preparation and prediction of PSA on container trade turned out to be accurate and successful, as in 1967, the port witnessed a steady stream of containers carried by conventional cargo vessels, which were adequately handled by the Authority with its existing equipment. Between a six-month interval in the year under review, approximately. 1,300 loaded/filled containers and 1,800 empty containers were handled successfully.[53] Numerous other projects were

[49] *Ibid.*

[50] *Ibid.*

[51] NAS/Singapore Political General/File No. 3024/2/1/ 'Singapore Newsletter', issued by the Singapore High Commission, Canberra,5/56.

[52] Combo ships were those ships that handled both conventional and containerised cargoes in the early phase of containerisation in the Indian Ocean arena.

[53] The year also saw the installation of brand-new components of machinery. In the second phase of the Authority's program to replace electric vehicles with diesel forklifts, 51 new forklift trucks were put into service. In addition, the mechanical fleet on the wharf was expanded to include a truck-mounted crane with a maximum lifting capacity of 274 tonnes at a radius of 15 feet, two heavy trailers with a capacity of 25 tonnes each, and a

completed/undertaken during the year, including the construction of two sampan landing piers at Clifford Pier, the hardstanding and rail track foundation in the port area, the building of a berth for the Port Engineer's Department at Blangah Bay and the refurbishment of wharf Godown 35/36 at Main Wharf. In addition to installation work, dredging was started in many locations, including the Selat Sinki Channel, to ensure that ships with draughts up to 50 feet below Admiralty Chart Datum might pass safely. At the end of the year, the Authority's Blair Plain Housing Estate, which included three blocks of 20-story apartments and one block of 10-story apartments for staff, was almost finished.

B. Computerisation

But at the end of the decade, the PSA took perhaps the most radical step, which upgraded its status as the most modern and efficient seaport of the south east Asia. It was about the adaptation of modern computer facilities solely with the purpose for the betterment of its working dynamics. However, at the initial stage, PSA decided to use the facilities of a computer manufacturer's service bureau rather than installing the Authority`s own equipment. This was perhaps done to keep an eye on how a massive capital investment in computerisation as an upgradation project would bring fruitful results to the overall efficiency of the port. The formal beginning of this process was marked by the establishment of the Electronic Data Processing Department manned by twelve key-punch operators and four senior officers. With the use of a computer, an integrated Wharf Documentation and Billing System that encompassed all ship operations and cargo handling was implemented on December 1, 1967. This was done with the intention of providing a more effective service to the shipping community as well as other port users. Following the implementation of appropriate programming for the operations, it was intended that Management would have access to statistics that had been unavailable in the past. This project perhaps brought fruitful results in port operation, which ultimately propelled the PSA in December 1968 to install its own new computer. This brand-new 16 K-word system computer with four tape drives had the capability of expanding its capacity

lorry with a capacity of 7 tonnes. In addition, orders were placed for two new waterboats, each with a capacity of 200 tonnes, as well as two tugs operating in the T class.

as its load rose. This was accomplished by simply "plugging in" extra peripherals or core storage without having to reprogram the computer.[54]

It was determined that this new computer would begin to function as of January 1969, and that it would take over the billing application that had been carried out by the local computer bureau in the past. In the beginning, the PSA made the decision that the computer would be utilised for the purpose of preparing wages for all 10,300 employees. These staff members include daily-rated, monthly-rated, clerical staff, and senior officers. Additionally, the PSA predicted that the new computer would be utilised for labour costing, billing, accounting, and tabulating statistics pertaining to the vessels and cargo that were stored at the Authority's wharves. It was also possible to make these statistics accessible to management for additional usage for any future correspondence.[55]

4.3 The Dual Forces Intertwined: Export-Promotion & the Box-Ships

If all the PSA's endeavours that started in the mid-1960s prepared the ground to withstand the kick of a metal box on its seashore, there was another actor that played behind the scenes and pushed the global forces of containerisation and unit load to the forefront of this little island, i.e., the policy of export promotion. Along with other forces—such as rapid industrialisation, stability of political climate, growth of trade unions, and developing port infrastructure—the government's policy of export promotion did something special that extended beyond the conventional ones, outperformed the other forces, and was instrumental in making the way in favour of reorienting Singapore's external trade towards unitisation.

Between 1967 and 1972, many attempts were made to commercialise Singaporean items in the external market. This was done by several strategies adopted by the 'Export Promotion Advisory Committee' of the Trade Development Board. The first and foremost was, as many developing nations did in the 1970s, chronic participation in international trade fairs and trade missions. With this act, the Committee helped the manufacturers of

[54] NAS/MCI/ *Singapore Yearbook,* 1968, p.382
[55] *Ibid.*

Singapore. Participation in trade fairs involved conducting exhibitions, as well as engaging in numerous meetings with importers and overseas purchasers. For instance, the Trade Division in Tokyo organised a trade exhibition in April 1971. Rubber hoses, air and oil filters, textiles, shoes, tinned food, paintings, purses, spectacles, orchids, furniture (wood and rattan), and tropical fish were among the products that were on display. Parallel to the exhibition was sending trade mission to foreign countries, mainly Japan. The aim was simple: to offer manufacturers the chance to not only observe the potential of the international market, but also to engage with potential customers at the exhibition. The exhibition gave publicity to Singapore as a supplier of both industrial and consumer goods. Furthermore, a small 'Singapore Week Display' was organised by Isetan Department Store of Tokyo and Singapore's Embassy in Tokyo to publicise Singapore's consumer products. In August, the Trade Division organised an exhibition in the ASEAN pavilion at the Djakarta Fair. A wide range of products was exhibited and well-received. On the other side, the Trade Division or Export Promotion Committee acted as the supplier of various information pertaining to the overseas buyers, market price of a product, and demand, and often arranged various meetings between foreign importers and local manufacturers. The Board's efforts frequently yielded positive outcomes, as seen by the foreign customers placing orders for Singaporean goods.[56]

Providing useful services to Singaporean manufacturers who were taking a chance by exporting their goods to developed nations under the Generalised System of Preferences (GSP) was the next significant task that the Trade Division, particularly its Certificate of Origin wing, carried out for the benefit of Singapore's exporters in the 1970s. The services provided included the distribution of GSP Scheme data, aid to producers with rules of origin, advice on the use of raw materials and components, and assistance in discovering sources of supply for specific goods. The Trade Division also assisted producers in seeking buyers and acquiring information on global markets via its commercial intelligence service. And sometimes the promotion of Singaporean products was conducted and aggravated by the active involvement of Singapore's Commercial Secretaries situated in foreign countries.

[56] Institute of Southeast Asian Studies (hereafter ISEAS)/Republic of Singapore/ Annual Report of the Trade Division, 1971, p.29.

Manufacturers and exporters had the provision/option to make/send enquiries to them directly. However, as the annual report of its Trade Division claimed, a very tiny proportion of manufacturers in Singapore was aware of the facilities that the Trade Division could provide to them.[57]

4.4 Dual shift

Increasing shipping tonnage/overseas trade means increasing berth usage. And the higher the berth occupancy, the less the scope for repairing/development works. In modern shipping economics, such a situation is generally considered negative for the proficiency of a seaport. In order to overcome this challenge, PSA came up with some strategic solutions. Rather than running conventional shift timing, the authority now started a third shift at the wharves in June 1968 with the purpose of enhancing the quality of services offered to shippers and shipping businesses. This initiative ultimately transformed the PSA into a 'round-the-clock' port. It had, on the one hand, made it possible for commercial ships to be unberthed overnight, and on the other hand, it prevented the berths from being occupied the next morning by boats that were coming, which resulted in an improvement in the turnaround time for ships that were using the port. In the same year, the Authority also implemented an upgraded single-shift gang ordering system in order to further simplify the activities that are carried out along the wharves. It was necessary to put gang orders, particularly for the second shift, more than twenty-four hours in advance, as was the case from the beginning. The new system allowed for the placement of labour requisitions for the second shift on the same day that the shift was scheduled to be performed. In addition, the port now offers 24-hour berthing and unberthing services. This new service, which began in May 1968, allowed vessels to be transported out at night once cargo processing was completed, freeing up berths for other vessels at daylight. Needless to say, such innovative and strategic steps taken by the PSA further impelled its proficiency compared to other Asian international ports.[58]

[57] *Ibid.*
[58] NAS/MCI/*Singapore Yearbook*, 1968, p.382.

4.5 International Collaboration

Besides attending overseas trade fairs, Singapore continued to expand its networks in parallel with its trade and shipping-related expansion. This is perfectly seen in her engagement in the seventies with various international platforms and forums. In 1971, Singapore actively attended the ASEAN and ECAFE sessions, especially with a hope to foster regional co-operation in trade and shipping. Furthermore, becoming a member of various organisations, which include ANRPC, UNCTAD, GATT, etc., in the same decade created global opportunities for Singapore toward rapid economic growth. This year was also crucial for the overall economy and trade of all the developing nations, including Singapore. A generalised system of non-discriminatory and non-reciprocal preference, termed as 'GSP', was implemented in favour of developing countries to assist their export trade relations with developed countries. This scheme helped reduce or remove the tariff on developing nations, which resulted in their goods becoming more competitive in the world market. In the same year, Singapore participated in the 2nd Assembly of the Association of Natural Rubber Producing Countries held at Jogjakarta in September 1971, as well as the various meetings of Working Parties on production, rubber stockpile problems, shipping, and joint regional marketing systems. On the other hand, ECAFE occasionally extended its role in establishing trade relations between the developing countries in the form of various tariff and non-tariff preferences on a reciprocal basis. Singapore at that time had no import duties or quotas on daily necessities and most other goods. Through the platform of ECAFT, Singapore tried to secure some trading advantages from the other Southeast Asian and Far Eastern countries in the form of a tariff reduction offer. This obviously worked for the expansion of the trade and commerce of Singapore.[59]

4.6 Export Promotion Expanded

As trade and shipping expanded, the government's earlier initiative to facilitate export promotion further gained momentum at the end of the 1970s. In an earlier period, as we

[59] ISEAS/Republic of Singapore/ Annual Report of the Trade Division, 1971, p. 34.

noted, the export promotion initiative was primarily confined to the domain of Japan and, to a lesser extent, some Southeast Asian countries. But as industrialisation matured and the shipping of PSA expanded, the policy of export promotion further reshaped its boundary. This is evidenced by the number of trading missions sent overseas by the Department of Trade between 1977 and 1978. As earlier, the Department continued to provide assistance to local manufacturers to expand their business contacts overseas by way of information sharing on current market conditions, government regulations, and export marketing strategy. But this time, the Department went further; it collaborated with the Singapore Manufacturers Association and various Chambers of Commerce and was able to exhibit from more than 110 manufacturers at nine international trade exhibitions. This endeavour proved fruitful, especially in the case of the Federal Republic of Germany and the United States, where a massive volume of contracts was signed. This positive experience further induced the Department of Trade to conduct specialised fairs in the established markets of the United States and the Federal Republic of Germany in the near future. Except for Germany and the US, three more trade missions were coordinated by the department, two to the EEC countries and one to Japan. Needless to say, such initiatives taken by the Department or the Government left a positive impact on Singapore-made products in global markets. The foreign buyers began considering the Singapore-made goods cheaper and more competitive. They frequently made enquiries to the exporters' base in Singapore.[60]

In the years 1975–1978, Singapore conducted, exhibited, and participated in a number of important trade promotion fairs in the West. For example, the Singapore embassy in Brussels**,** in collaboration with the EC Commission, successfully participated in a number of trade fairs. These include the Paris International Fair, Partners-for-Progress' Berlin Fair, the International Fair for Arts & Handicrafts, Copenhagen, the Marseilles International Fair, etc. In France, Singapore also took part in the Paris International Fair and the Marseille International Fair in 1976, where a lot of companies participated. Eleven Singaporean companies that make things like handbags, clothes, toys, electronics,

[60] ISEAS/Republic of Singapore/ Ministry of Finance/Department of Trade, Annual Report 1976/77, 'Activities in Trade Promotion', p.20.

furniture, umbrellas, and even shoes and boots for women took part in the fair. In Germany**,** Singapore participated in two international fairs: "Partners for Progress" in Berlin in August 1976, followed by the Frankfurt International Fair. The goal was to offer maximum exposure to a variety of Singapore exhibits with potential in the EEC market. Nine Singapore manufacturers and two trading businesses showcased their items, which included leather articles, textiles, locks, toys, wooden and rattan furniture, calculators, shoes, and aluminium wall tiles. At the Frankfurt International Fair, Singapore had 17 manufacturers and one trade firm. The majority of the consumer products on display were orchids, leather goods, cutlery, heavy-density polyethylene, food and waste bags, and dairy. And the results were extremely favourable. In the USA**,** the task of promoting Singapore products was handed over to the Commercial Office of Singapore in New York. This office was actively involved in a series of trade promotion activities to promote Singapore products to the US market. Here, the prime concern was based on selling electronic products.[61]

In addition to coordinating fair participation, the Commercial Secretary conducted personal meetings and a direct mail campaign to develop commercial relationships between local producers and US buyers. Japan had always been a major exhibition venue for Singapore-made products since the mid-1960s. Here, the Singapore Embassy in Tokyo, to promote Singapore products, provided trade opportunities to Singapore manufacturers through organising trade fairs and in-store promotion**s.** However, trade exhibitions were held outside of Tokyo, such as the Singapore Fair at Yaohan Chain Stores in August 1976, where a wide range of items were presented and sold, including cane furniture, batik products, pewterware handicrafts, jewellery, sauces, and other consumables. The Embassy and the SEAPCENTRE in Japan set up business sessions for members of the mission to meet possible business partners. Members were also able to examine the overall market circumstances for their products in Japan. Singapore participated in the Tokyo International Trade Fair from April 22 to May 1, 1977, to expose more of its produced products to Japanese markets, particularly those of greater value. Like the USA, the

[61] *Ibid.*

Commercial Secretary in Sydney played a greater role in promoting Singapore-made products in Australia. They included polythene bags, knockdown shelving systems, and metal fabricated cabinets.[62]

4.7 Industrialisation

Singapore adopted the process of industrialisation before its independence as a nation-state. In 1960, a policy was initiated to measure its industrialisation output and changing production structure by collecting some important data regarding this. Basically, before full independence, Singapore's prime engagement in the entrepot trade controlled its industrialisation. But in 1961, the government established the Economic Development Board (EDB), a special unit to foster the industrialisation process in Singapore. The Board had several functions like management of the industrial estate, technical and financial support, research, and administration, etc. Subsequently, additional entities, such as the Development Bank of Singapore (DBS) and Jurong Town Corporation, were tasked with accelerating the nation's industrialisation.[63] However, apart from the initiative of the nation state, Singapore enjoyed the advantage of having a considerable portion of private capital, which helped foster its industrialisation process. Furthermore, the urban nature of this island created an extra stimulus for the growth of the manufacturing industry.[64]

The industrialisation of Singapore encompassed multiple phases. In its earlier period, particular emphasis was placed on developing the infrastructure. Following the island's complete independence in 1965, a strong impetus arose to enhance the nation's export commerce. This was likely associated with Singapore's persistent trade imbalance throughout the sixties. Needless to say, due to its geographical location, efficient transport communication, and infrastructure, Singapore successfully became the "base of manufacturing", gradually attracting many multinational companies. In the next phase, the aim was shifted to create a high-skilled but low-cost workforce to support the industrialisation process; the result was the establishment of several training institutes

[62] *Ibid*, p. 21

[63] NAS/MCI/ *Singapore Yearbook,* 1971, p.135.

[64] 'Malaysia and Singapore: a survey for businessmen,' Report of the British Trade Mission and the Republic of Singapore, sponsored by the London and Birmingham Chambers of Commerce, 1966, pp.8-9.

destined mainly for industrial training. This explicitly impacted the establishment of several European companies in Singapore between 1965 and 1970. The next step that the government took was offering the policy of tax promotion to such companies with the sole purpose of augmenting the establishment of export-based firms in Singapore. In 1967, a special act titled 'Economic Incentive Act' was passed, which fostered the industrialisation process in Singapore by way of granting some manufacturing companies tax exemption/reduction for a period of five years.[65] Additionally, special care was taken to establish good relations among the government, the employee, and the employer. In the seventies, the EDB started expanding its work dynamics by establishing its branch centre in certain overseas countries, mostly Western industrial nations. These include New York, San Francisco, Zurich, London, Chicago, Hong Kong, Tokyo, Melbourne, and Switzerland. By establishing such offices or branches, EDB was able to provide market information about Singapore to those foreign companies that sought to do business with Singapore. Additionally, those offices helped the Singapore trainees to find jobs in many multinational companies through joint training schemes. After all, these endeavours proved to be successful, as is reflected in the growth of foreign investment in Singapore in these two decades. It should be noted that the potential of the port of Singapore in shipping was the main factor behind the country's successful and quick industrialisation. Within two decades, Singapore Port ranked as the fourth busiest port in the world, and it connected Singapore-made products to the world with more than 200 international shipping lines visiting the port.[66]

4.8 Shipping and Containers

Since the mid-1970s, the PSA and Singapore shippers, as well as shipowners and other entities involved in maritime and international trade, have witnessed various aspects of progress in the shipping sector.[67] These consisted of increasing tonnage, improving port

[65] NAS/MCI/ *Singapore Yearbook,* 1972, p.122.

[66] *Ibid.*, p. 123.

[67] Containerisation received a positive vibe from the Singaporean shipowners at the beginning of the seventies. Shipowners basically started preferring trade in containers chiefly because of four reasons: speed, reliability, safety and simplicity. See, Port of Singapore Authority (Hereafter PSA), *Proceedings of the First Container Seminar*, 4th & 5th

infrastructure, bolstering multilateral trade ties, increasing the number of ships calling at the port, an increase in the number of foreign ships registered with the Singapore Ship Registry, and a steady rise in the country's rank among the world's principal merchant fleets. Although the tide of decline appeared occasionally, its main trend was chiefly an upward trajectory that was directly linked with the growth and expansion of containerisation. From 1970 onwards, a level of consistency is noticed in the port's growth rate in overseas shipping, as evident in its import and export trade index. The trade of general cargo showed a gradual increase year by year. And the port's financial position became much stronger with the consistency of its rising revenue from the trade. In 1970, it increased by 17% and the net surplus of the port increased by 43.7%.[68] This trend continued in the subsequent years. However, only during the global trade slump did its maritime trade face a slight downward trend. This happened basically because of the heavy linkage of Singapore's external trade with most of the industrial countries, in which the trade slump had a significant impact. For example, the economic recession of 1975 resulted in a 13.7% decline in Singapore's total tonnage handled, from 60.4 million freight tonnes in 1974 to 52.1 million tonnes. At that time, the share of general cargo in total cargo the PSA handled was not more than 28.2%, and the remaining mineral oil still occupied the largest portion. There was heterogeneity in this drop, though. For example, the volume of general cargo discharged witnessed a marginal increase from 9.1 million tonnes in 1974 to 9.5 million tonnes in 1975, while the loaded cargo faced a drop from 5.7 million freight tonnes to 5.3 million tonnes. But the decline was largely seen in the trade of mineral oil, both discharged and loaded, from 28.6 million tonnes and 17.1 million tonnes, respectively, in 1974 to 23.6 million tonnes and 13.7 million tonnes, respectively.[69]

However, it is interesting to note that the trade slump, which had affected Singapore's overall trade, failed to have an adverse effect on ship movements. Ships calling at the port of Singapore and the containerised cargo it handled both showed an upward trend. For

August 1970, H.F. Bostock (represented from Singapore Shipowners' Association), 'Container Ships and Through Transport', p.12.

[68] PSA, Annual Reports & Accounts, 1970, p.2.

[69] ISEAS/Republic of Singapore/ Ministry of Finance/Department of Trade, Annual Report 1975, p.17.

reference, a total of 38,518 ships entered, and 38,522 ships cleared in 1975, a relative rise compared to the previous year, during which a total of 36,187 ships entered, and 36,240 ships cleared the port. Similarly, the containerised cargo that the PSA (along with Keppel Wharves and Sembawang Port) handled in 1975 recorded an increase of 13.4% over the previous year. In 1975, the combined total of discharged and loaded cargo handled by these three ports was three million tonnes. However, once again, the type of cargo varied significantly. The outbound container cargo trade rose by 45.1%, while the inbound cargo faced a 3.3% decline. Until the middle of the 1970s, the PSA's container traffic was concentrated in four geographical regions: Japan, the United States, the United Kingdom, and the EEC nations. These territories accounted for around 64% of the PSA's inward container trade and 74% of its outbound container trade. Intra-Asian container trade had not yet begun to take off on a significant scale.

In addition to the global trade downturn, another factor influencing the fluctuations in container shipping and international commerce of PSA and Southeast Asia was the discriminatory measures enacted by the prevailing multinational shipping conferences. These included mainly the general rate increase (GRI) and surcharges imposed on Singapore-based shippers. However, things took a turn for the worse in 1975 when sixteen established conference lines involved in Singapore's export trade raised freight costs by over 20%.[70] Additionally, thirteen shipping companies in the next year tacked on around 19% fees.[71] It was very connected with the growth of containerisation, since the conference lines started claiming that the upgrade towards buying new container ships or converting the conventional ones involved a huge capital outlay. The ultimate result was the continuous imposition of GRI upon Singapore-based shippers.[72]

The conference system, as a colonial institution, was sustained successfully following the end of the colonial regime in Asia. In most cases, the nascent national governments of developing nations choose to eschew the operational domain of the conference lines. This

[70] *Ibid.*

[71] ISEAS/Republic of Singapore/ Ministry of Finance/Department of Trade, Annual Report 76/77, p.18.

[72] NUS/Singapore National Shippers' Council (hereafter SNSC), *Annual Report*, 1976, p. 34.

was perhaps attributed to the fact that most developing nations in Asia were members of the Commonwealth. Till 1970, the UK was their most favoured trading partner, and it occupied the largest share in their overseas trade. But since the mid-sixties, mostly due to the continuous rise of freight increase, a group of institutions— generally named as the shippers' council or shippers association—was established. Occasionally backed by the national government, these shippers' councils started being vocal against the discriminatory policy of the shipping conference. The majority of the international commerce of emerging nations was conducted by foreign shipping lines affiliated with established conventions; hence, the imposition of freight surcharges adversely affected their trade balance. During the seventies, when shipping lines consistently levied freight fees/surcharges, Singapore saw the establishment of numerous shippers' councils/associations. The primary objective of these councils was to advocate for the interests of Singapore-based shippers involved in export trade by consulting with conference lines. Their mandate was quite clear: "firstly, break the conference contract system and secondly, to fight for just freight rates".[73]

Throughout the seventies, Singapore-based shippers' councils, along with other shippers' councils in Southeast and East Asia, made the utmost effort to decrease the freight increases, and in many cases, they achieved success. For instance, in 1975, the Singapore National Shippers Council (SNSC) was able to reduce the freight increase from 24% to 18% after a consultation with the Straits/Bombay/Karachi/Gulf Conference. In the same year, another shipper's council, called the Federation of ASEAN Shippers' Council (FASC), ultimately agreed to postpone the implementation of the general freight increase. The SNSC's efforts to lower freight rates and protect Singapore's shippers persisted in the subsequent years. In 1976, SNSC effectively mitigated the 5% freight rate increase by making an arrangement with the Straits/Rangoon Conference. Shipping councils located in Singapore were notably loud against the established conference mechanisms and effective in mitigating the increase in freight rates. In 1976, SNSC successfully further reduced the 5% freight rate increase by an agreement with the Straits/Rangoon

[73] NUS/SNSC, *Annual Report*, 1st Annual General Meeting, 1974, p.8.

Conference. Singapore-based shipping councils were very vocal against the established conference systems and were effective in reducing the freight rate increase. This was reflected in the year 1977 when the general freight rate increases dropped from 13% to 7%.[74] Subsequently, the SNSC enhanced its influence by forging strong alliances with other ASEAN shippers' councils, including the Malaysian National Shippers' Council, and regularly convened with conference lines to negotiate freight rate increases.[75] However, they were not always successful; at times, the dominant conference lines overshadowed the voices of those shippers. In 1979, FASC opposed the surcharges levied by the Far Eastern Freight Conference (FEFC), arguing that the Consumer Price Index (CPI) should not influence the freight rate that justified the surcharges imposed by the FEFC. But, in the end, the FEFC remained steadfast in its decision and applied the fee with only a minimal modification.[76]

Till 1983, Singapore's economy had not recovered from the world economic recession. Singapore faced a huge loss in many industries such as shipbuilding, ship repairing and oil. In 1982, the ship repairing industry faced a 21% fall in turnover.[77] From the shipowners' view, its economic growth was still "sluggish" and "fragile".[78] The maritime trade of the Singapore Port was also affected by this recession.[79] Due to the massive unemployment and adoption of protectionist policies of the Western industrial nations, exports from OECD countries fell significantly, and demand for manufacturing goods declined worldwide. It reflected in the container trade of the Tanjong Pagar Container Terminal, which experienced its historic low growth in trade in the last ten years.[80] Still, the PSA's concern was to defend in favour of its container trade. PSA did not stop its several containerisation projects in these years; they even gained momentum.[81] PSA also

[74] ISEAS/Republic of Singapore/ Ministry of Finance/Department of Trade, Annual Report 1977/78, p.20.
[75] *Ibid.*
[76] ISEAS/Republic of Singapore/ Ministry of Finance/Department of Trade, Annual Report 1979/80, p. 12-13.
[77] NAS/ Singapore International Chamber of Commerce, Annual Report, 1982-1985, pp.140-141.
[78] NAS/Minutes of Meeting of Singapore Shipowners' Association/ 'Proposed PSA Tariff Increases', letter from the secretary, Singapore Shipowners' Association, to the secretary, Port of Singapore Authority, 20th June 1983,
[79] General cargo and container trade at the beginning of the eighties declined globally. Ref. ISEAS/*Maritime Transport 1982*, (Paris: OECD 1983), pp.62-63.
[80] PSA, Annual Report, 1982, p.4.
[81] *Ibid.*

restructured its tariff, which was quite beneficial for container ships but not for conventional ones.[82] Even at that time, PSA placed much more stress upon developing and upgrading its container handling facilities. In the 1980s, it initiated a series of programs for boosting containerisation.[83] The PSA's move toward investment in developing infrastructure proved to be prudent, especially in terms of container trade. In spite of the worldwide shipping crisis in the 1980s, both the total shipping tonnage and the number of ships visiting the port of Singapore increased, and this growth was steady in the following years. The achievement of efficiency growth of Singapore-based oil refinery resulted in the growth of oil tankers calling at the port, and that further had a result on the growth of overall tonnage of PSA by 10% in 1982. The oil terminals and the wharves combinedly handled 92.5 million freight tonnes. Overall, throughout the 1980s, the port enjoyed a 7% increase in total cargo handled. Needless to say, such growth of trade in both directions and various types had a positive impact on the container trade and shipping. And this is evidenced by two concubine facts. First, this period witnessed the continuing growth of the share of containerised cargo in total general cargo trade, which, by the 1980s, reached to 47%. Second, out of six general cargo gateways, three of them continuously reported an increase in the stuffing and destuffing of containers. The 1980s were the period during which the PSA, as well as the government, paid topmost attention to increasing the potential of handling containers in the berths. This was done by the huge investment in installing equipment, rapid modernisation and automation of facilities and extension of storage facilities in and outside the port complex.[84]

Among the six berths, the East Lagoon container berth showed perhaps the most radical progress in both the development work and the trade. To cope with the technological changes in cargo handling, PSA sanctioned a total of 20 million dollars for the installation of various equipment, such as transtainers, prime movers, and forklifts. This endeavour resulted in a 17% growth of trade, which accounted for almost 13 million freight tonnes

[82] NAS/Minutes of Meeting of Singapore Shipowners' Association/ 'Proposed PSA Tariff Increases', *loc.cit.*
[83] NAS/MIS/'Challenges Ahead', 2nd Triennial Delegates Conference, organised by Singapore Port Workers Union, 23rd February 1982, pp.10-13.
[84] NAS/MCI/ *Singapore Yearbook, 1982*, p.63.

by 1982. And this growth further propelled the PSA to invest an additional 31 million dollars for the installation of 10 transtainers and four quay cranes in the same year. Among the other important and impactful developments was computerisation. This trend started in March 1981 when a computerised ship-planning programme was officially implemented in this berth allocated only to serve the container ships. Moreover, both the delivery system at CFS and the allocation of containers at the export yards were containerised to speed up the process. The other way to handle containers in a more efficient way, PSA further started constructing a six-container berth of 355 meters to make it operational within a year.[85]

Like the East Lagoon, other berths such as Keppel Wharves also experienced a trade boom in the 1980s. The general cargo trade in this berth rose to 8.1 million freight tonnes, but the speed was more visible in the number of containers it handled, which was 79,800 by 1981, almost a 45% increase. To handle this surge of container traffic, the port authority purchased additional mechanical equipment worth $2.2 million, which helped to cope with this emerging tide. Also, from the labour side, the labour productivity increased by 10% and the port administration took the policy to allot berths on a priority basis to those vessels having higher productivity. For the cargo handling efficiency, the authority computerised the process of the allocation of stevedore gangs and the cargo delivery system was further computerised.[86]

The shipping and trade in the Pasir Panjang, another emerging wharf of the PSA, which contained three deep-water berths and two coastal berths, also grew by 12% amounting to five million tonnes. The wharves also aided the growth of the container traffic of PSA. By 1981, this gateway handled 20,400 containers, which showed a 50% increase from the previous year. Like other berths, installation of equipment, such as forklift trucks, prime movers, and chassis valued at more than a billion dollars, had been purchased and became operational.[87]

[85] *Ibid.*
[86] *Ibid.*
[87] *Ibid.*

However, the growth of trade/tonnage was limited mainly to containers, and the surge of container boxes in the port reflected a general pattern of world trade. Rapid containerisation, which included things such as huge capital investment, procurement of equipment and expansion of port premises, had some adverse effects on other modes of transportation as well. For example, the other two wharves of the PSA, named Telok Ayer Wharves and Sembawang Wharves, which handled mainly non-containerised cargo, faced a decline rate of tonnage of 17% and 21% respectively in the same period when the PSA witnessed a growth in container ships visiting the port. This fall in traffic of non-containerised cargo resulted in the conversion of such berths into container berths.[88]

Almost in every port city where there was little scope for expanding the port's premises due to the geographical position, as in Bombay, the spur of container boxes and the development of containerisation faced the issue of setting up CFS. For making the containerisation project successful and to achieve its prime goal, that is delivery of goods door to door quickly, it is inevitable to make available sufficient backup areas near or in the port premises, and failure to achieve this would lead to unavoidable port congestion. But when the container traffic grew rapidly, the PSA perhaps paid the second topmost attention to setting up storage facilities in Singapore. This was the period when a single warehouse, the largest in Singapore, was built up costing five million dollars and having a covered area of 27,000 square metres, and a storage capacity of 36,000 tonnes. In later times, more warehouses were established. For example, the authority took the initiative to set up another five-storey warehouse at Kepple Road worth 69 million dollars. These storage spaces were created for the stuffing and destuffing of containers on the ground floor. To further the advancement of the facilities and work efficiency, the authority took the initiative to install automatic stackers with a microcomputer, which could help locate the cargoes in those warehouses. PSA was further planning to set up a ten-storey warehouse costing more than $100 million at Alexandra Road, which could provide up to 126,000 square metres.[89]

[88] *Ibid.*, p.64.
[89] NAS/MCI/*Singapore Yearbook, 1983*, p. 136.

As an auxiliary facility to support the interests of the shipping community as well as port users, the PSA started providing centralised facilities of the application for port clearance, berth allocation, safety permits, immigration, health, etc. Between 1981 and 1983, a large amount of capital investment was made toward making the PSA the most efficient container port of Southeast Asia. For example, a total of 316 mechanical equipment costing 25.5 million dollars were commissioned, in which eleven gentry cranes were purchased for the increased demand of container handling capacity. For maintaining and increasing the depth of the port, one new dredging fleet was also commissioned. The container terminals gradually became more modernised by establishing workshops at many different terminals.[90] Not only the port premises, but the internal transport sector was also developed. This was hardly needed for the efficient movements of containers within the city and the country. Road expansion received the third topmost priority during this phase. The government undertook a five-year road development programme in the 1980s to provide communication access to the interior and newly developed regions. The government commissioned more than 100 million dollars in funding for the expansion of roads. This resulted in the further expansion of new roads and the widening of existing roads in Singapore.[91]

Apart from the initiative of the government, various Singapore-based lobbies associated directly with shipping were active in favour of containerisation. Three agents occupied the largest share in contributing the most for the easy movements of containers: the *first* one was its shipping firms, mostly the Neptune Orient Lines (NOL). Between 1980 and 1990, NOL increased its potential for container handling by way of developing its container fleet and also through a joint venture/chartering with other Asian/international shipping lines. At the beginning of the eighties, five container ships having a capacity of 1600 TEUs were added to NOL's fleet. Also in 1981, NOL signed a contract with China Corporation of Shipbuilding Industry for the construction of two 700-TEU containerships. NOL also inaugurated/started a joint container service with Ceylon Shipping Corporation at the

[90] NAS/MCI/*Singapore Yearbook,* 1983, p. 65.
[91] *Ibid.*, p. 66.

same time.[92] This would definitely add extra stimulus to the container business in Singapore, but also increase the bargaining position of NOL. [93] The second agent was the Singapore-based freight forwarders, who, within a decade, started operating on an international scale that eventually contributed to bringing the real impact of containerisation, that is, the economies of scale.[94] And most importantly, the third one was the stable labour climate of Singapore. The good cooperation between the labour association, government, and the management of PSA proved to be a catalyst for containerisation development.[95]

The above endeavours that paid much emphasis on improving container shipping at Singapore by way of big capital investment proved to be successful in the coming years. At the Tanjong Pagar terminal, the main gateway of container shipping of the PSA during the eighties, there was a 10% increase in container cargo in 1985. It handled almost 26.6 million cargoes by volume and 1.6 million TEUs. This was partly due to the sufficient number of available equipment and berths for handling a large amount of cargo. Till 1985, it had nine berths, 18 quay cranes and a 51-hectare backup area for stacking almost 42,000 TEUs. Moreover, PSA undertook a third phase of development of this terminal to add more container berths and upgrade the document transfer system from manual to automatic.[96] At the end of this decade, the proportion of containerised cargo in total volume of general cargo showed an increasing rate, for example 32% during the year 1986. At Tanjong Pagar, the number of TEUs grew to more than two million by 1986, and its total berth capacity reached to 10, serving with 18 quay cranes, 41-yard gentry cranes, 19 van carriers, along with a number of prime movers and chassis. Apart from the development of equipment, PSA took the initiative to increase the number of CFS in this terminal to eight by 1987. For the betterment of the security of the cargoes, the authority

[92]National Library Singapore (hereafter NLS)/*NeptuneNews*, Neptune Orient Lines (Hereafter NOL), January/February 1981 & March 1982, pp. 1,2.
[93] PSA, under an agreement, started to give NOL the preferential rights to use its container berths. NLS/Neptune News, NOL, January 1987.
[94] NUS/ 'Country Level Seminar on Freight Forwarding', 19-20 June 1987, Singapore, p. 2.
[95] NUS/ Evelyn Sue Wong, 'Industrial Relations in Singapore- Challenge of the 1980s', Department of Business Administration, 1982, pp.1-4.
[96] NAS/MCI/ *Singapore Yearbook,* 1986, p. 119.

also took the initiative to install CCTV in the complex. However, the greatest initiative that the PSA, as well as the government, took in the decade of the eighties to enhance/catch the container shipping and trade was the programme of setting up a special container terminal on a nearby location, which would contain five multi-purpose berths and a supporting facility of storing 8,500 containers within the complex. This terminal was planned to be linked with the PSA by a tunnel. The whole cost of this project was proposed to be a billion dollars.[97]

4.9 Liberalisation and Containers

When Singapore entered the decade of the nineties, its shipping sector provided perhaps the most solid support in its overall economy. It became a more modernised, dynamic, and globally connected sector than the previous sixties and seventies. The PSA occupied the status of the busiest port in the world in terms of the tonnage it handled. In an estimation of 1997, more than 800 ships were gathered in the port of Singapore at a time, and it was the home port of more than 130,000 ships yearly with more than 800 million gross tons, serving almost 400 shipping lines which connected Singapore with more than 600 ports worldwide. Its contribution to world shipping and economy became vital and could not be bypassed at any cost. Excessive capital investment in infrastructure and equipment towards the expansion of containerisation in the last three decades made Singapore one of the best container ports in the world. This was reflected in the position of containers in the merchant fleet, which by the end of 1998, occupied the third position among all types of cargo vessels (after oil tanker and bulk carrier, respectively). Singapore was the main transhipment hub of Asia and handled more than 14 million TEUs annually, making PSA the single topmost container terminal operator in the world. Container shipping of PSA showed an uninterrupted growth rate since the whole decade; by 1997, it handled more than 14 million TEUs annually.[98]

For the future development of container shipping, the government decided to corporatise the PSA in 1997, which mainly included the liberalisation of some port

[97] NAS/MCI/ *Singapore Yearbook,* 1987, p. 130.
[98] NAS/MCI, *Singapore Yearbook, 1998*, p. 171-72

services. But the real motto was to grant the container operator the space of power so that they could respond to various market challenges timely. This was initiated a bit early with the liberalisation of pilotage service in 1996, followed by the liberalisation of tug services in the next year, which encouraged competitive rates and enhanced service levels. By the end of the decade, Singapore's port had three major container terminals in operation, but its urge to maintain it was explicitly visible in the commissioning of a fourth container terminal worth seven billion dollars at Pasir Panjang, which could boost the container tonnage of PSA up to 18 million TEUs. Containerisation development also impacted the potential and ranking of Singapore's merchant fleet, which, at the end of the decade, reached to the 10th position in the world.[99]

4.10 Road to the New Millennium

The decade of 1990 experienced the highest growth of container trade for the port of Singapore. PSA became the 'World Number One' container port until 1992, when Hong Kong outstripped Singapore.[100] However, PSA still retained its fame as one of the best global warehousing and distribution centres and a major transhipment hub in the Asia-Pacific region. It is evidenced by the fact that PSA was able to win three awards in 1992 as the best warehouse, best seaport and best terminal operator at the Asian Freight Industry Awards Competition organised by *Cargonews Asia*.[101] Not only within Asia, but PSA's international standard was perfectly illuminated when the *World Competitiveness Report* (compiled by the World Economic Forum) ranked Singapore as the most developed country in terms of port access among 14 industrialised countries in the world.[102] By that time, the port was home to almost 700 shipping lines, linking Singapore with 600 international ports, thus making PSA a true international port authority. Its major container terminal, the Tanjong Pagar, with ten container berths and seven CFS, handled more than four million TEUs. This tremendous growth of container boxes pushed the PSA to invest more in containerisation. Perhaps, to the PSA, the containerisation proved

[99] *Ibid.*
[100] PSA, *Annual Report*, 1992, p.4.
[101] *Ibid.*
[102] *Ibid.*

to be the single most feasible project for further investment. This was proved when the PSA planned in 1989 to invest a billion dollars to develop a new container terminal to be operational within two years or so.[103] In this whole decade, PSA's prime focus was to create terminal facilities exclusively for handling containers, as reflected in its policy towards the conversion of the traditional berths into container berths. For example, the Keppel, which was a conventional terminal, was planned to be converted into a container terminal by 1994 with the aim of handling almost eight million TEUs. At the same time, PSA started developing another new container terminal at Brani, an offshore island, with all modern technology. Basically, PSA's move in developing three new container terminals—Tanjong Pagar, Brani and Keppel—contained an aim to make the Singapore Port Authority capable of handling 13 million TEUs by the mid-nineties.[104]

A notable aspect of the PSA's initiative in containerisation development in the 1990s was its increased engagement in the development of sister and new container terminals around the waterfront. Chiefly for Singapore's wide acceptance as the best port in providing topmost handling equipment—along with auxiliary services such as banking, finance, warehousing, and trade—major container shipping lines of the world began preferring to visit the port. Therefore, focusing on setting up new container terminals became a radical necessity for the PSA. It is perfectly exhibited when the Singapore port in 1998 overtook Hong Kong and successfully regained its former position as the top container port in the world, a position that it had lost in 1992.[105] Its container trade rate was always thriving and going up, even at times when the country faced a severe economic crisis[106], or when other forms of conventional cargo showed a downward trend.[107] In 1990, for instance, when the

[103] NAS/MCI/ *Singapore Yearbook,*1990*,* pp.129-130

[104] NAS/MCI/ *Singapore Yearbook,*1993*,* pp. 117-118.

[105] MPA, *Annual Report*, 1998, p.30.

[106] The year 1998 was a catastrophe for the port of Singapore. This was due to the spread of the Asian financial crisis in Southeast Asia and, to some extent, the differential devaluation of regional currencies, which resulted imbalance of cargo flows and the country's external trade, as well as the issue of empty containers, which made Singapore Port more expensive than the other regional ports in terms of tariff. However, both the government and the port authority worked together to handle the issue. Several unique strategies were adopted, such as the implementation of a 20 % concession in port dues for container ships. This caused an economic loss of five million dollars to the PSA. But the PSA continued to follow this policy and was able to retain its top position in world container trade. Ref. MPA, *Annual Report*, 1998, p.15

[107] MPA, *Annual Report*, 1999, p. 19.

US economy was going through a massive crisis, container trade in Singapore achieved a 3.2% increase.[108] By the end of the century, the PSA's mega project of setting up a new container terminal for seven billion dollars not only proves that containerisation was a success for Singapore or to a large extent, at the Asian waterfront, but it also reflects the ubiquitous development of containerisation in both Asia and worldwide at the turn of the new century.

4.11 Conclusion

This chapter examines the history of maritime Singapore before its establishment in 1829 as a British trading post. It also discusses the economic developments that occurred in Singapore following the World War II, as well as the country's ascent in the global trade and shipping, particularly the rise of Singapore as the busiest container port in Southeast Asia. Since the 1960s, after the establishment of Singapore as an independent state, it began to focus more on the development of its exports, and thus, the port received topmost attention as a tool for increasing export potential. But until 1980, the condition of Singapore Port was not satisfactory to the shippers. However, the port authority faced spontaneous upward trends of container shipping, mainly imports, and thus urged the government to allow some special privileges to the maritime sectors for the better improvement of the country's ocean shipping. Since 1980, container shipping has received topmost priority from the port and government, and it was during this time that Singapore started receiving giant loans from international development institutions. It is found in the discussion that, at its initial stage, even the World Bank was unsure about investing in container facilities in Singapore due to the fact that such a big investment would never bring a positive return. But in reality, Singapore received topmost attention from world shippers and shipping companies due to its geographical location. The government welcomed private investment in the port sector, and its result was very satisfactory, as within a few years, Singapore replaced some other regional ports as a hub of container trade. The direct impact of the growth of container trade was also the changing nature of government policy on trade. Since the 1970s, the government has implemented a

[108] NOL, *Annual Report*, 1991, p.7.

programme for industrialisation, a move that was directly connected with the growing container trade. In the later decades, when the containerisation project proved to be the most feasible one, the PSA undertook a massive programme to cater for the container trade, such as investing in setting up new container terminals and converting traditional ones to modern berths. At the end of the century, as it is found in this chapter, container shipping helped the PSA to hold its premier position as the best port in the world.

CONCLUSION

CONCLUSION

Between the outbreak of the Second World War and the onset of decolonisation, the world transport sector, both land and sea, witnessed perhaps the singular greatest logistical revolution. Carrying goods and cargoes in many different forms and sizes through several modes of transportation, which required a lot of handling and operating costs, became a torturous task for Western shippers. Malcolm McLean, who was engaged in truck logistics in the US, started thinking about solving this problem. While observing the cargo-loading process in the dock, his mind conceptualised a small iron box that, he thought, could be a smart solution. His endeavour to buy two old tankers and convert them into container-carrying vessels ultimately proved to be the greatest revolution in ocean shipping after the invention of the steamship in the eighteenth century. This little metal box finally fetched some of the most unexpected rewards for its users. Within decades, the idea of carrying goods in containers became very popular in the western waterfront and countries on both sides of the Atlantic started moving towards full-fledged containerisation, in which the US ports were in the lead. Within a very short span of time, this new concept of cargo handling, probably due to its venerable impact on cost savings, was successfully accepted and materialised by port trusts, shippers, exporters, importers, freight-forwarders, port users, and shipowners in the West. McLean was perhaps right when he said, "I don't have vessels; I have sea-going trucks."

However, this little box proved to be a problematic one when it entered the water fronts east of Suez. Because little was its shape, but was not little its concubine necessities. It required giant cranes to handle, deep-draft docks to anchor ships, very skilled professional personnel to operate the equipment, easy customs procedures and efficient inland road networks to move the cargoes door-to-door. Overall, a large capital outlay coupled with several structural, managerial and administrative setups was required to make the containerisation project successful in Asian states.

This research has examined the introduction of container shipping and the development of containerisation in three Asian ports and tried to find out how the Asian states and non-

state actors reacted to this new kind of technological innovation in world shipping. While going through the sources, it is observed that the policy of adopting containerisation was both a choice and a necessity for Indian ports. The arrival of ALP ships carrying containers at the Bombay waterfront made Bombay Port Trust quite serious about containerisation, but logically, the port became more vocal in support of installing container equipment at a time when the port started continuously losing the food grain traffic through which the trust tended to earn a huge profit. Furthermore, the fear of losing out on the container ships due to a paucity of equipment and, to some extent, the continuous congestion problems in the docks forced the Bombay Port Trust to adopt a containerisation scheme. So, to Bombay, it was a necessity to survive. While Calcutta was much ahead of Bombay in adopting the unitisation. Its penchant towards containerisation was more aggressive and active than Bombay's. This was due to several reasons, as mentioned in the chapter in detail, but mainly due to three issues. First, being a riverine port, it received enormous funding from the central government and various international agencies and by the end of the century, Calcutta's dredging cost was 100% subsidised. The grant enabled the trust to invest much more in upgrading the infrastructure needed for unitisation. Second, Calcutta had established good trading networks with most of the container trading nations. Those nations paid utmost care to improve their potential. For example, throughout the seventies, a number of conferences and workshops were being held jointly by the US and USSR at Calcutta on the issue of containerisation of Calcutta Port. And third, the expansion of the Second World War in East Asia and the emergence of Southeast and East Asian states in international shipping augmented Calcutta's relative importance in the maritime world. That's why adopting it for the container ships was a choice for Calcutta, not a necessity.[1]

But Singapore, on the other hand, as has been found in this research, presents a different example. Similar to India, its newly infant nation state had struggled a lot with many internal deficiencies such as unemployment, low living standards and industrial outputs, scarcity of natural resources, and political tensions. However, from the early stage of the advent of container boxes in the Southeast Asian waterfront, Singapore showed a radical interest. It is to noting that, unlike Indian ports, Singapore had not enjoyed a general "precondition" for containerisation. Its low level of industrial output, coupled with the

[1] Because, till the end of the decade, POL and other bulk trade occupied a considerable share in its external trade.

paucity of capital sources, was detrimental to any progress in containerisation. In fact, till the 1980s, many experts both in the West and Singapore were not in favour of the government's adoption of containerisation, but rather opined about its detrimental outcome, even though by 1970, it was estimated that approx 75% of the PSA's traffic of general cargo could be containerised.[2] But in reality, Singapore presented a dramatically distinct example. Since the beginning of the seventies, it began paying utmost care to container shipping facilities and within a very short period of time, Singapore successfully became one of the best and busiest container ports not only of Asia but the world. In this process, two factors contributed the most. First was the geographical position of Singapore. It is located between the US and Japanese ports, one of the busiest container shipping routes in the world. In the seventies, container movements between these two nations heavily increased, thanks to their growth in industrial output after the war. Singapore, being a transhipment port, had no choice but to survive except to evolve into a container port.[3] The second was the very nature of the port of Singapore, a free port for all since its foundation in 1819. Being a free port, it attracted the giant container ships sailing to Southeast Asia. The ships tended to use it as a 'port of call' because it was a free port. These two forces collectively supply enough wind to its sail and help fly its flag high. Thus, containerisation was a necessity of the Port of Singapore, and not a choice.

This research also highlighted several steps that the Singapore government took to improve its potential for containerisation. The government adopted a rapid industrialisation programme to increase the production of the country. This would definitely help maintain a balance between import and export trade of containers, thereby reducing the trade deficit curve and mitigating the flow of empty containers. Several schemes were introduced by the Trade Development Board to spread the Singaporean products in overseas markets, such as organising exhibitions in many international trade fairs and forming special teams that acted as promoters of the Singaporean products.[4] The PSA also undertook a massive upgrading programme for its facilities to cope with the new

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[2] Port of Singapore Authority, *Proceedings of the First Container Seminar*, 4th & 5th August 1970, Loh Heng Kee, 'PSA Enters the Container Age', p.14.

[3] In an estimation, it was found in the 1970s that adopting containerisation or establishing a container berth would increase the total capacity of handling freight, both import and export, by approximately. 566% per hour. Ref. Peter W. Bocock, 'Singapore, Progress for People', International Monetary Fund, p.33.

[4] NAS/Ministry of Trade and Industry/ 'Export Promotion', from Director, Department of Trade, to all Commercial Secretaries, TD C003:2/3 Vol.3, 17 February 1975.

technological innovation. Existing facilities were upgraded, new warehouses were set up, and a number of ICDs/CFSs were proposed. These steps helped the easy movement of containers within the port complex and kept the docks free from congestion.

Notwithstanding, as we find in this research, there are several similarities of containerisation between the East and the West, especially in the sphere of development and outcome. The first and foremost was its impact on the port structure. In both the eastern and western hemispheres, containerisation faced congestion problems in the docks. This was the overall worldwide problem that the ports of the world faced during the early phase of containerisation expansion. The issue brought up the concept of setting up a satellite port near the main mother port complex, having deep-draft docks. Similar to the establishment of the Port of Tilbury for London, Nhava Sheva was established for Bombay, Haldia for Calcutta, and the Pasir Panjang terminal for Singapore. However, the satellite ports fetched varied outcomes; in some cases, the existing mother ports, like Bombay, lost their significance, whilst in others, such as London, they retained their importance. Second, port trusts on both sides of the Suez struggled a lot with the labour issues and devised some strategies to handle the problem. The only difference is that the West could afford to go with certain effective policies, such as negotiations by offering lucrative retirement benefits that involved a huge capital expenditure, which the East could not afford.

Map No: 5A, Location of ICDs, CFSs, and Ports in India

Source: 'A Perspective Plan For the Development of Containerisation in India (Part-II)', Report Submitted by RITES, Ministry of Commerce, Government of India, March 1989.

Our analysis, derived from the corporate records and their correspondence with the government, including the port trusts, reveals how containerisation made an impact on the overall environment of the Asian business and how it impacted the economies of scale. This research argues that the national government in India, although it was in favour of containerisation, undertook minimal measures to ensure the project's success. If we consider the role of government in the first phase of containerisation between 1970 and 1980, it was limited to conducting some feasibility studies and reports. Because containerisation involved a huge capital investment with unpredictable returns. Therefore, the government just played as an "observer", just like a vigilance body, and not an "actor".

But it was the non-state actors – which include shipowners, importers, exporters, various freight forwarders and shippers' associations – which all made rudimentary support towards containerisation, both in India and Singapore. However, exporters of certain commodities that had the highest potential to be shipped through containers and maintained direct trade relations with advanced container-trading nations enjoyed the greatest benefits. The case of jute is an ideal example. Most of the jute associations based in Calcutta sent proposals to the government in the 1970s to improve the potential of the Calcutta Port to handle containers. The tea exporters showed a similar stance. The second most beneficiary group who took enormous advantage from the spread of containerisation was the port trusts themselves. They imposed a very high-rated demurrage rate on container ships, rented the warehouses and CFS to importers and exporters and earned considerable profits. After all, the majority of the interest groups associated with containerisation got fruitful results.

By and large, the overall picture of containerisation along the Asian waterfront contains both positive and negative vibes, and the ports have varied experiences. Sometimes, they faced the same problems and struggled with the same obstacles (as is the case with capital), while sometimes the impact upon them differed. The move towards setting up satellite ports near the mother ports was a commonality not only among Asian ports but also among ports on both sides of the Suez. However, capital, technological transfer, know-how and, above all, the port hierarchy have shown varied results.

The other outcome was the intrusion of transnational and multinational development institutions in Asian waterfronts. It has been documented in detail in this research how the paucity of capital since the early phase of containerisation in Indian Ocean ports swept the

clouds and prepared the road towards privatisation.[5] Joint partnerships with foreign parties on the installation of container handling equipment at the port complex induced the private companies to establish the CFS, while the implementation of combined maritime education in the country transformed the port complex into a place of *transnational capital accumulation*. But this force actually got the true momentum when the Asian nation-states started thinking of economic liberalism in the 1980s and 1990s. In this era, much more emphasis was being given to boosting the country's exports, and private capital investment in port sectors was allowed or welcomed by the government. Practically, it became a radical necessity in the case of container ports.[6] Thus, the ports gradually became the non-state actors by the century's end. Undoubtedly, containerisation played the most decisive role in this transformation.

It is observed in this research that the development of containerisation had a profound impact on the internal transport networks as well as the dynamics of urban metropolises. The ports situated in the old metropolis faced several urban problems that impeded their physical expansion. Bombay and, to some extent, Calcutta were the two ideal examples, where the narrow streets and congested markets forbade the further expansion of the port complex. This scenario became too problematic for the port trusts when the frequency of containers coming to the docks drastically increased in the 1980s, which demanded the setting up of CFS for the horizontal and vertical movements of the containers. Due to the shortage of space and the inability to undertake any further expansion of the port complex,

[5] Since the end of the eighties, trends towards liberalisation of the shipping sector in developing countries, especially India, have already started since the end of the eighties in which much more emphasis was paid to the concept of joint venture and FDI. Ref. International Chamber of Commerce, *Maritime Joint Ventures*, an international symposium, 5-6 October, Singapore, p.55-59.

[6] After the liberalisation, the Indian government paid special emphasis on the country's export trade and fixed a target of $200-300 billion by the end of the twentieth century. This would increase the volume of seaport traffic by two or three times, possibly 300 million. At the same time, the country's container trade was increasing rapidly. Therefore, it became necessary to improve the port facilities. According to the Indian Chamber of Commerce, India needed 400 new berths to cater to the new traffic in ports, which cost around Rs. 40,000 crores. Such a huge investment could not be met only with government funding. The Chamber in its report stated, "What is important to note, therefore, is that the magnitude of the funds required to develop the port sector to international standards as well as to meet the projected cargo movement is beyond the scope of budgetary support. Loans from multilateral financial institutions like the World Bank and the Asian Development Bank will also not suffice to meet the entire demand for resources." Ref. KPTMA, *Proceedings of the National Conference on Private Sector Participation For Competitiveness for Indian Ports*, 'Chapter IV: Private Sector Participation in Port Development', held on 10 October 1996, jointly organized by the British Deputy High Commission and Indian Chamber of Commerce, pp.35-36. KPT8434

the trusts were bound to set up the CFS outside the port and sometimes outside the city. As a result, these measures would reduce not only the transit times of the cargoes but also mitigate the control of the port trusts on the CFS. However, at the end, these arrangements resulted in further complications of the customs procedures. On the other hand, containerisation induced the expansion and development of internal road networks. Road networks became too vital for the easy movement of containers between the ICD/CFS and the ports, especially when there was little chance of any port expansion. If we see the statistics, we find that the rate of highway expansion in India and Singapore between the 1980s and 1990s, at a time when containerisation expanded rapidly, was heavily increased.

Now, if we compare the relations between the government policy and the containerisation development among the ports of Calcutta, Bombay and Singapore, we find quite a distinct and unconnected equation. India showed a relatively *slower* pace regarding investment, decision-making, and commissioning of container berths than Singapore, in spite of the fact that up until 1980, major Indian ports were in a far greater position than the port of Singapore in world shipping. In fact, as we argue in the thesis, those reports and studies conducted by several international agencies on the feasibility of containerisation in India were in favour of equipment investment in major Indian ports, and sometimes their projected rate of container growth of Indian ports, such as Bombay, was considered to be higher than that of the ports of Western nations. Notwithstanding, the Indian government was very suspicious about the outcome of such a huge investment and therefore kept itself within the limits of conducting frequent survey reports. The correspondence between the Bombay Port Trust and the National Government between the period from 1970 to 1980 shows a similar picture, where there was a sharp contrast between the port trust and the government on the matter of the inclusion of the containerisation scheme in the Five-Year Plan.[7]

[7] Since 1975, Indian shipping companies have faced significant challenges, primarily, but not limited to, cash flow issues, exacerbated by the onset of the global financial recession. This situation became increasingly complex in the 1980s due to the overproduction of shipping capacity, far exceeding the demand for shipping services. Consequently, numerous Indian shipping companies were unable to repay their foreign loans, as they required foreign currency remittance. This time, the Indian government extended help by granting subsidies and assistance to those firms to liquidate their foreign loans. This was approved and recommended unanimously by the National Shipping Board at its meeting at Cochin in 1978. It is very interesting to note that these years saw an official push toward containerisation, with the establishment of study groups and conducting of feasibility reports initiated by the government, all reflecting an institutional shift to the modernisation of cargo handling techniques in the

However, Singapore presents just the opposite example, where the government's interest in the feasibility was minimal, and since the early phase of containerisation in the 1970s, the Port of Singapore Authority has received unprecedented support from the government. In its initial phase the government invested $100 million to cope with the newly formed unit load.[8] The governmental procedure was simple and quick. That is why, within a very short period, the PSA successfully started operating full-fledged container berths.

Nevertheless, the container trade in India remained under the control of international shipping companies. Indian ports enhanced their container-handling capabilities; yet, the transportation of these metal containers from the West to the Asian coastline across the high seas was predominantly controlled by giant international container shipping corporations.[9] Capital clearly played a decisive role; yet, several other elements demonstrated comparable importance. The initial concern was around insurance. Container trade involves the movement of commodities via multiple modalities, including trucks, railroads, feeder vessels, and ships. The insurance expense for the boxes throughout their whole voyage from the place of origin to the destination would be exorbitant for both shippers and importers. Secondly, the timely filling of empty container boxes is inherently precarious, as liner shipping adheres to a fixed schedule for sailing. This difficulty occurs in contemporary times as well. Furthermore, possessing a limited fleet of container ships, Indian shipping lines have fallen behind in cooperating with foreign shipping lines. The fewer container ships a shipping company possesses, the lower its cargo sharing power in

country. It is assumed that, similar to the global situation, the shipping crisis did not impede the container trade in India. India's move to containerisation during a period when shipping companies encountered cash flow difficulties may serve as a strategic mechanism to circumvent the ongoing crisis. Foreign purchasers of Indian products were increasingly favouring the receipt of their consignments in containers. Both Indian ports and shipping companies may have sought to capitalise on this market to address the prevailing shipping crisis. Ref. NAI/PMO/File No.17, from the Chairman of National Shipping Board to the Prime Minister, D.O. No. CH/NSB/78 dated October 6, 1978.

[8] It is worth mentioning that at the same time, Singapore was facing a regular imbalance in its trade, which could be a hindrance to container shipping. Ref. NUS/ 'Containerisation in Singapore Cher Soon, an Academic Exercise submitted for BA in Economics, Department of Economics, University of Singapore, 1970/1971, p.vi.

[9] Singapore's container shipping company, the Neptune Orient Lines, occupied a considerable share in India's container shipping. It had established networks with major ports such as Bombay and Madras, and by 1982, it started operations between South Asia and Europe trade. Ref. NLS/ *Neptune News*, Neptune Orient Lines (Hereafter NOL), May/June 1982, p.1.

the container trade. These factors positioned foreign shipping lines at the forefront of the Asian/Indian container trade.[10]

But India's relatively backward position in containerisation compared to other Asian states, such as Singapore or Dubai, was attributed to several other factors beyond capital. The Indian government started paying interest on unit loads not before the 1980s, when most of the study reports conducted in the 1970s were in favour of containerisation in major Indian ports. However, the absence of a hub port for container trade in India was one of the major impediments to the development of containerisation. This resulted in the dependency of Indian container shippers on the neighbouring hub ports such as Colombo, Singapore or Dubai. Thus, the Indian container trade was chiefly confined to the feeder services. In an estimation, it was seen that more than 70 per cent of the cargo handled by the port of Colombo at the end of the twentieth century was the transhipment of Indian containers. This was the reason why, at the end of the century, the Indian government decided to establish JNPT as a separate hub port of container shipping. This could save both time and cost for Indian cargo shippers. For example, a study showed that JNPT could save at least Rs. 6,084 per TEU and 48 hours of sailing time for ships instead of using Salalah (Oman) as a transhipment port.[11]

The other impediment was the lack of efficient transport networks. Countries like India, which have vast landmasses, need efficient internal road transport networks to get the real fruits of containerisation and unit load. This could connect the ICDs and CFSs with the major seaports and help save the transit time. Usually, containerisation fosters road networks in a country. Singapore is the ideal example. In our study, it has been found that the expansion of road networks in Singapore was entangled with the growth of container traffic at the PSA. However, in India, it was not often the case. Various studies conducted in the eighties and nineties on Indian containerisation stressed the transport issue. For example, if we consider the ICDs, we find that in India, the first ICD was established in 1981 by the Indian Railways in Bangalore. The position of ICDs, as indicated in map no. 5A was far from the ports. Inefficient road networks thus increased both the transit time

[10] Interview with Shantanu Paul, General Manager (Retd), Shipping Corporation of India. Date: 20 November 2024.

[11] Capt. Jimmy Sarbh, 'JN Port: The Future Hub Port of India', *The Link, Global Trade and Freight Review, Vol.VII, No.11*, November 2002, pp.46-48. KPT8354

and the transport cost. Also, the absence of proper customs laws on unit loads and containers delayed the development of multimodal transport in India until 1993, when India passed a specific 'Multimodal Transport Act'. But literally, this act did not come into force due to several problems.[12] All these things resulted in the high transport cost of container movements in India.[13] In 1996, the Indian Chamber of Commerce opined that the implementation of a separate law on unit load could discourage container movements in the country and could be an impediment to liberalisation, as such a law imposes certain restrictions on the movements of goods. Instead, the Chamber argued that, like developed countries, India should modify the existing transport and customs laws and incorporate the multimodal transport norms within.[14]

[12] KPTMA, *Proceedings of the National Conference on Private Sector Participation For Competitiveness for Indian Ports*, 'Chapter III: Containerisation in India', op.cit., p. 28. KPT8394

[13] According to the international standard, Inland Transportation cost should not be more than 20% of the total multimodal transportation. In India, it reached to 40%

[14] KPTMA, *Proceedings of the National Conference on Private Sector Participation For Competitiveness for Indian Ports*, 'Chapter III: Containerisation in India',op.cit.32.

APPENDIX

1.

View of Singapore Town and Harbour
Source: *Memoir of the life and public services of Sir Thomas Stamford Raffles,* J. Murray, London, 1830, p. 561

2.

View Of Singapore , Artist/creator: W.C. Smith, 1830

Source: British Library Online source, P1681

3.

Japanese Assault Troops Landing in Singapore

SOURCE: Malcolm Murfett, *Between Two Oceans: A Military History of Singapore From 1275 to 1971*, Singapore : Marshall Cavendish Academic, 2004, P. 311.

4.

Singapore Port in 1970s

(Source: Port of Singapore Authority, Annual Report, 1971.)

5.

Containers, along with general cargo, began coming to Singapore Port in 1973

(Source: Singapore Department of Trade: Annual Report)

6.

Promotion of Singapore products in the foreign market (Source: Singapore Department of Trade: Annual Report 1976/77)

7.

PSA Container Port in 1972 (Source: Port of Singapore Authority)

8.

Ceremony of admitting water to Victoria Dock, Bombay Port by Lady Reay, 1888

Source: British Library Online source, C13715-29

9.

Construction of Container Facilities at Singapore Port with the assistance of the World Bank

Source: International Monetary Fund (IMF)

10.

Kyderpoor Bridge, (Taken from plate 26 of William Wood's 'Views of Calcutta, 1833)

Source: British Library Online source, X630(26)

11.

Views of Calcutta and Barrackpore, 1865, Artist: Samuel Bourne

Source: British Library Online source, Photo 29/(29)

12.

Saugor Light House Inspection Book, (1878-1982

Source: Kolkata Port Trust Archives (KPTA)

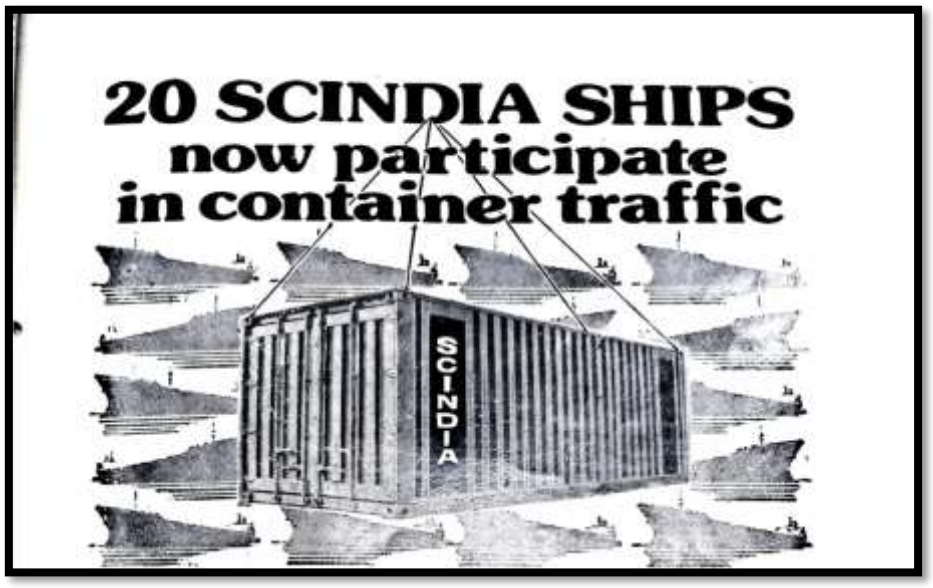
13.

Indian Maritime University Kolkata Campus (photo taken by the author)

14.

Inauguration of DMET Calcutta by Prime Minister J. L. Nehru (photo taken by the author)

15.



Advertisement of Scindia Steam Navigation Company on Container Trade

Source: Indian Merchants' Chamber of Commerce Bombay

16.

M.V. State of Haryana (A Vessel having carrying capacity of 16,700 DWT)

Source: Scindia Steam Navigation Company Files

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2. Trade Statistics of Major Indian Ports
3. Reports of Asian Development Bank
4. Annual Administration Reports of Various Major Port Trusts of India
5. Files of the Traffic Department
6. UNCTAD Reports on Containerisation

7. MUMBAI PORT AUTHORITY (MPA)

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8. BOMBAY CHAMBER OF COMMERCE (BCC)

1. Annual Reports (Available copies)

9. INDIAN MERCHANTS CHAMBER OF COMMERCE AND INDUSTRY (IMC), MUMBAI

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3. Old pamphlets of IMC
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10. MAHARASTRA STATE ARCHIVES, MUMBAI (MSA)

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11. TEA BOARD INDIA, KOLKATA (TBI)

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15. CENTRAL SECRETARIAT LIBRARY NEW DELHI (CSL)

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