BEFORE THE STEAM: STRUCTURAL CHANGES IN THE INDIAN OCEAN SHIPPING

Soumyajit Mukherjee[1]

Abstract

Embeddedness is a state of affairs in which economic operations are perpetually shaped by non-economic institutions such as religion, clan, kinship, or politics. This connotation accurately encapsulates the essence of pre-colonial Indian Ocean trade and shipping, where economic exchange was deeply entwined with broader societal structures. The present expository writing elucidates the significant 'structural changes' of long-distance shipping networks in the Indian Ocean, using a comprehensive and comparative approach. Using historical examples, the article has investigated the factors that contributed to the success and failure of various maritime networks and explored their significant historical repercussions. A detailed study has found that the common traits of Asian states, such as their autocratic nature, anti-maritime attitude, and heavy reliance on agrarian economy, were determined to be utterly incompatible with the sustainability of long-distance shipping networks. However, such constraints failed to stifle the growth of maritime trade due to their counterbalancing factors, such as 'inclusive' statehood policies, rulers' cosmopolitan approaches to commercial matters, the diverse 'managerial' and innovative competencies of Asian maritime merchants, shared geographical necessities, and political power wielded by various merchant groups, far outweighed the former. The shipping networks collapsed because of their amalgamation with larger historical forces, including empire-building, feeble naval capabilities, proneness to the age-old maritime technology, and absence of a class of statesmen holding strong maritime attitudes. Finally, this essay shows how the change in maritime technology since the beginning of the eighteenth century led to a substantial reduction in the effectiveness of such positive variables in the Indian Ocean trade. The discussion has corroborated the assertion of an institutional mechanism proposed by a cohort of contemporary economists to elucidate globalization and growth in ocean shipping.

Keywords: Indian Ocean trade, maritime networks, pre-colonial shipping, institutional embeddedness, maritime technology, economic history.

1. Research Fellow, Jadavpur University, India; mukherjee.soumyaedu@gmail.com ; this research article forms a part of the author's ongoing Ph.D. thesis (unpublished) at Jadavpur University, India. This research is funded by the West Bengal State Government and Jadavpur University Research Fellowship scheme, ICSSR, and ICHR, Ministry of Education, New Delhi.

INTRODUCTION

The sea-shore has been the point of departure, to knowledge, as to commerce. The most advanced nations are always those who navigate the most.

(Ralph Waldo: Society and Solitude, 1870) (Tenold & Ojala, 2017)

The phrases 'the age of discovery', 'the age of exploration', 'the age of overseas expansion', etc., are much more recognizable to the students of world history. These terms are widely used in academia and the history textbooks to denote the European overseas expansion since the fifteenth century. But did we ever pause to re-consider or re-think their pertinent usage? Did all the terms and their timing (as they conventionally denote) fit well with the facts of world maritime history? Well, a thorough and in-depth study of Asian maritime history can reveal several intriguing facts that could upend our conventional way of periodization in history, such as the questions: why are the so-called dates 1492 and 1498 used to indicate the age of discovery? And why not 1411 when a Chinese admiral reached Aden from Nanking by ship? Why not 762 when groups of Chinese prisoners completed their return journey between China and Arabia? Why have not the Harappan colonies in Mesopotamia which were established 4000 years ago, or the Indian merchant's colonies in South East Asia, been deemed as the beginning of the globalization? Indian Ocean maritime history is indeed very rich; Indian Ocean had the world's most extended shipping networks, busiest seaports, bountiful varieties of traded commodities, and very skilled seafarers. Following World War II (1945), the Indian Ocean again became the most important maritime zone of the world in terms of the tonnage of trade and shipping, numbers of biggest container ports, and ocean politics. A detailed, informative, and research-based study of the Indian Ocean shipping could cover these academic voids. The present essay has tried to explain the dynamics of long-distance shipping networks in the Indian Ocean. The author has fixed its point of discussion from the early days of human civilization to the introduction of steamships in the Ocean.

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.
>
> (Sahai, 2006)

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 2300 BCE and 1750 BCE 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 had an impact on the Indus people's culture. Even recently published books by certain well-known historians have joined this trend (Roy, 2012, p. 21).

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 Mesopotamia proves beyond any reasonable doubt 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, (Prabhakar, 2013)

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

Table 1 - List of Meluhhan style objects

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

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. (Vidale, 2004, p. 264) After all, if the Indus traders were greatly involved in such large-scale commerce, it is difficult to assume that they did not organize their agencies,

warehouses, and credit institutions at the Sumerian court, as Massimo Vidale has posited. Mari was an important city-state and outpost of Sumerian Civilization. Excavation work 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 (Prabhakar, 2013, p. 21).

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 approximately 14,000 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 peacefully settled here, colonized 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 have been acquired (Rao, 1965, pp. 30–32).

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 is 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 (3100 BCE). 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.

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 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 (Kenoyer, 1997, p. 277). 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. 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. (Vogt, 1996) For a while, the Reserve Bank of India (RBI) once issued special gulf rupees in 1959! (Ranjan & Prakash, 2010, p. 14) Today, large numbers of Indians living and working in gulf countries are the most visible results 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. (Sanyal, 2016, p. 46) At last, it could be said that 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 when 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 and growing reputation. (Warmington, 1995, p. 82). Rome annexed Egypt in 30 BC and soon after, since 27 BC 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. (Ballet, 2005, p. 117) 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?
>
> (Abulafia, 2019, p. 116)

However, we do not have a proper datasheet that supports such a claim. Modern research proves both parties benefited from this trade relation. There were considerable changes that 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, the contact had been limited and irregular; now, it has become more frequent and consistent. The frequency of visiting Indian emissaries to Rome between the two subsequent centuries further validated this proposition (Majumdar, 2001, p. 625). Second, Shipping or voyaging times were also slashed in the process. It was owing to Hippalus , who invented the proper utilization of the monsoon winds in AD 45 (AD 45), that ships 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) (Majumdar, 2001, p. 621). 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 which 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 (Majumdar, 2001, p. 621)! Previously, trading was primarily confined to the trade of precious oriental items. It 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 of shipping times and securing sea passages by reducing the risk of piracy at sea (Ray, 2005, pp. 99–100). The increase in trade volume further contributed to the increase in the size of ships (Schoff, 1912, p. 26). 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 (Schoff, 1912, p. 26). Later, numerous kings, empires, and great dynasties competed for control of these key trading ports and emporia in order to secure commercial interest (Boussac & Salles, 2005, p. 624). 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 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 (McLaughlin, 2014, p. xix). 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 (Warmington, 1995, pp. 319–320).

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 (Cowell, 1897, Vol. 3, No. 339, p. 83). 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 [Dighanikaya]
>
> (*The Journal of the Royal Asiatic Society*, 1899, p. 432)

Also, in Brharkatha-sloka-samgraha we find the story of Sanudasa, a man, who after numerous tries, finally crossed the sea and arrived there. (Majumdar & Dasgupta, 1982, pp. 1287–1288) 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 (Majumdar & Dasgupta, 1982, p. 1290). 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 the kingdom of Sailendra (Majumdar & Dasgupta, 1982, p. 1297). 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 as an example of 'Hindu colonization' or termed it 'Greater 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 (Curtin 1992, pp. 101–103).

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-built ships. Some tiny Indian kingdoms also started maritime businesses, and there are numerous old Indian coins depicting various kinds of ships . 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 (Morarjee, 1948, pp. 1–7).

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.
>
> – Ludovico di Varthema (Varthema, 1863, p. 153).

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 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 (Crone, 2004; Koehler, 2014; Rodinson, 2007). 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 (Chaudhuri, 2008, p. 43). 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 (see Bulliet, 1990). 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 centre of the time. Medina had a firm grip over the entire Mediterranean region's market (Chaudhuri, 2008, p. 34).

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 (De Somogyi, 1998, p. 59). In 762 CE, 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 (De Somogyi, 1998, p. 60). The transfer also boosted trade on the port of Basra, which quickly rose to prominence as one of medieval 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 (De Somogyi, 1998, p. 61). Previously, Persian merchants used many Chinese ports as the evidence of the presence of the Persian ships at Canton dated back to early 717 CE (Abu-Lughod, 1991, p. 198; Chaudhuri, 2008, p. 50); since 758 CE, 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 9th century Persian Muslim merchant and traveller, named Soleiman al-Tajir, contains a detailed depiction of an Arabian ship going to China before the 9th century. However, in 878 CE, 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. Some historians argue as to 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 (Abu-Lughod, 1991, p. 200).

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 (Chaudhuri, 2008, p. 39). Other than Basra, another port of Persian Gulf that traded with China and India was Siraf (De Somogyi, 1998, p. 61). 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 (Chaudhuri, 2008, p. 50). It took nearly eighteen months to travel from the Persian Gulf to China. Some Chinese prisoners were seized by Islamic soldiers during the Battle of Talas in 751 CE and eventually returned to China via a Chinese junk that sailed out of the Gulf of Aden in 762 CE (Ponting, 2001, p. 360).

The Islamic business networks of the Indian Ocean 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 (Chaudhuri, 2008, p. 57). Another location is Zanzibar, where archaeologists discovered a mosque and a Kufic inscription, indicating the presence of Muslim traders along the East African coastline (Lombard, 2003, p. 221).

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) (Pearson, 2006, p. 88). 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 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 a monopoly partner in the Aden-India trade (Paine, 2013, pp. 362–364). 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 961CE, Cyprus in 963 CE etc). The Umayyad Empire of Spain was ultimately overthrown in 1031 CE. As a result, Fatimid's attention was drawn away from the Mediterranean towards the Indian Ocean.

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. 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. Neither Vijayanagara nor the Delhi Sultanate was a maritime power (Risso, 1995, p. 41). 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 (Paine, 2013, p. 384). Two centuries later, Arabic navigators soon followed suit, abandoning their reliance on the moon and stars in favour of a compass (Abu-Lughod, 1991, p. 326). 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.
>
> (Lewis, 1991, p. 136)

However, as Professor 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 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 it contained heavily weighted consumption commodities). They, too, hauled loads of 100 to 400 tonnes (Curtin, 1992, pp. 119–120).

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 (Buschmann, 2007, p. 21). 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-centralized, 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. (Buschmann, 2007, p. 23) The Song Dynasty established the standard copper coin in 960 CE, 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 1024 CE, and within a century, they had become a major means of commerce throughout the country. These shifts in the mentality and policy of the Chinese government, as well as the newly more organized shape of the Chinese economy, surely aided the expansion of China's participation in Indian Ocean trade.

Graph no. 1, 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 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 medieval 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 (Ma, 1433/1997, p. 160). In this book,

Calicut was referred to as 'the great country of the Western Ocean', and Sumatra 'the principal centre of the Western Ocean' (Ma, 1433/1997, pp. 137–138). For the port of Hormuz, the 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" (Ma, 1433/1997, p. 165).

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 (Paine, 2013, p. 368). 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 CE, such naval ventures 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 she established a trading diaspora in the Indian Ocean littoral societies, which played a significant role in the exchange networks in the region (Buschmann, 2007, pp. 31–32).

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 swords 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 (Lombard, 2003, p. 179).

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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 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 (Bhacker, 2010, p. 169). Vosoughi, a scholar of Middle Eastern history, cleverly remarked: "History of the kings of Hormuz .... is the history of Iranian maritime trade" (Vosoughi, 2010, p. 89). Even Hormuz's commerce was totally related to its political policy. All policymaking and trade facilitation were given top importance (Vosoughi, 2010, p. 96). Hormuz's merchants wielded political power in order to facilitate trade (Vosoughi, 2010, p. 98).

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. (Barbosa, 1921, pp. 135–145) The 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" (Pearson, 2006, p. 62). Furthermore, Islamic traders were divided into a plethora of sects and organizations. 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 (Battuta, 1962, pp. 813, 865; Polo, 1953, ch. 26, p. 52; Varthema, 1863, pp. 275–276), which was in stark contrast to the medieval Mediterranean, where commercial ships were usually supported by military convoys due to the chronic naval warfare (Subramanian, 1999, p. 39). 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 territory by providing them numerous specific safeguards to conduct maritime trade (Barbosa, 1921, pp. 73–77;Chakravarti, 2005, p. 140). Using research-based descriptions, Ranabir Chakravarti explains the amalgamation or relationship between war and trade in the Indian Ocean. He asserted that the traders in the Indian Ocean world had a strong cosmopolitan identity (Chakravarti, 2009). 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" (Abu-Lughod, 1991, p. 275).

> 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 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.
>
> (Abu-Lughod, 1991, p. 275)

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) (Pearson, 2006, p. 91).

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. (Frye, 2010, p. 146) 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. (Attman, 2006, p. 9) The introduction of the dinar, a gold coin, established an Islamic monetary base among the Indian Ocean littoral societies (Lombard, 2003, p. 221).

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 (De Somogyi, 1998, p. 61). From the key 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 (Trivellato, 2009; Aslanian, 2011). Indian (Muslim) traders were able to settle at the port of Aden for business; (Battuta, 1962, p. 372) they even reached Alexandria (an African port in the Mediterranean) where they occupied a dominant position in the spice trade (Benjamin of Tudela, 1840, p. 157; Ovington, 1994, p. 64). Also, the Bengali Muslim merchants travelled and settled in South-east Asia. (Battuta, 2010, p. 874).

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 us 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. (Dasgupta, 2001, p. 27) 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 of the most critical issues in Asian history, such as the timing of capitalism in the subcontinent, the nature of Asian states, merchant organizations, and trading practise. Later, Dutch historian J. C. Van Leur defended such a proposition of Mooreland and promulgated his famous 'Pedlar Thesis'. With insightful documentation of raw data, he strongly argued that Europeans hardly succeeded in changing the pattern of indigenous shipping networks in the Indian Ocean until the end of the 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 (Van Leur, 2008). By polishing the earlier debates, his student and one of the best scholars of South-East Asian trade Professor Meilink-Roelofsz gave a new vision of the Indian Ocean trade pattern through 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 (Meilink-Roelofsz, 2013). Ashin Das Gupta engaged in a very serious research on 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 (Dasgupta, 2001, p. 32). 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 other contemporary Asian empires (Dasgupta, 1979).

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 Professor Eric Wolf has aptly described as an 'imaginary treasure house of unlimited wealth' (Wolf, 2010, p. 232). 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 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. (Ponting, 2001, p. 520) 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. Professor 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 (Malekandathil, 2015, p. 69).

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 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 equipment and weapons and often supplied them to the local monarchs. Evidence indicated that even during Shivaji's massacre of Surat in 1664 CE, 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 organizations in the Bay of Bengal, allowing them to compete more effectively (Malekandathil, 2015, pp. 72–73; Subrahmanyam, 1990; Stephen, 1997). 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 colonizing spirit, as well as her religious fanaticism. After 1661 CE, 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 (De Somogyi, 1998, pp. 113–114). 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 (Rothermund, 2014, p. 63). Prior to their arrival, Asian maritime trade was conducted with very modest protection expenses, despite the presence of a significant piracy problem (Curtin, 1992, p. 137; Barbosa, 1921, p. 193). 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 (Malekandathil, 2015, pp. 164–165). 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. Professor 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 became the lingua franca of maritime Asia as a suitable language for conducting business (Darwin, 2008, p. 56).

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 1600 CE and the Dutch East India Company (VOC) in 1602 CE. Since multiple investors operated these commercial organizations, 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 (Furber, 1976, p. 268). As a reference for the readers, it is noted here, that once the Dutch confiscated ships including goods valued at a million rupees, which belonged to the Mughal emperor Shah Jahan in the year

1649 CE However, they were unable to maintain command over European ships that were not Dutch (Furber, 1976, p. 269).

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Structural division: European overseas trading companies were structured differently from other mercantile groups. These entrepreneurs 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 (Steensgaard, 1975). On the other hand, historian Ashin Das Gupta argues that Indian traders were organized around informal organizations of groups and families, which he asserted would lead to divisions and strife among them (Das Gupta, 2001, Introduction).

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 (de Grandpré, 1803, pp. 228–230; Minutes of Evidence, 1853, p. 301; Grose, 1750, pp. 234, 239–240). Some researchers believe that after losing their rights to trans-oceanic trade, Indian coastal populations, such as the Mappilas of Malabar, turned to piracy (Roy, 2012, p. 99). On the contrary, Professor Dionisius Agius, a historian of Islamic dhows argued that piracy in the Indian Ocean was always endemic in character and merely acted for menace only. This trend is continuing even up to recent times (Agius, 2014, p. 247; Ovington, 1994).

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 (Ponting, 2001, p. 528). 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.

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" (Arasaratnam, 1994, p. 271).

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 (Lewis, 1973, pp. 238–264). Both the size and number of European ships increased gradually:

Table no. 1 Dutch Ships

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 in 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 (Lewis, 1973, pp. 273–274; de Grandpré, 1803, p. 84).

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, saltpetre, Chinese silk. Finally, Chinese tea (particularly green tea) replaced all these by the second half of the eighteenth century (Roy, 2012, p. 93; Rothermund, 2014, p. 95).

Dependency: During the expansion of these European trading systems, the Europeans relied heavily on Indian/Asian traders for the conduct of their business (de Grandpré, 1803, Vol. 2, pp. 19, 28–29) 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, who was the most powerful of them, as he controlled a huge number of ships that were mostly engaged in west Asia trade (Roy, 2015, p. 177).

Ports: Economic historian Tirthankar Roy has noticed a new and considerable feature of European made port cities around the Indian Ocean. He observed that, 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 (Roy, 2012, p. 122; Varthema, 1863, p. 224; Archaeological Survey of India, 2007, p. 53). 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*' (Roy, 2012, p. 121).

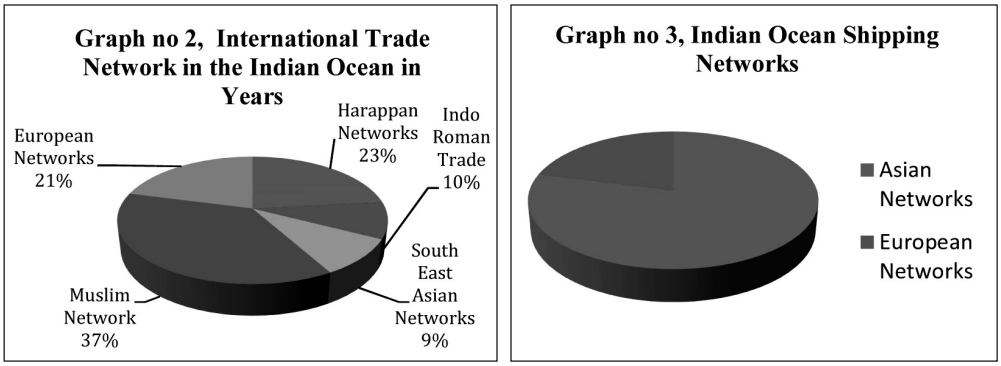
AFTERMATH OR ENDGAME?

> 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] (Bombay Secretariat, 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 which entered the 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. (The Fifth Report, 1830, p. 405; Valentia, 1809, p. 179) Although keeping a watch on the Indian Ocean's history for the next two hundred 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 (de Grandpré, 1803, Vol. 2, p. 17; Mookerji, 1999, pp. 254–255; Morarjee, 1948, pp. 1–7). 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 commodities (Pearson, 2006, p. 194; Goswami, 2016, pp. 130–185). 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 to 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 prompted a modern scholar to coin the term 're-emergence of Asian shipping' (Broeze, 1987, pp. 73–95). 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.

CONCLUSION



Source: Graphical representation is made by the author. Data collected from several sources.

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, medieval Muslim networks in the Indian Ocean 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 Indian Ocean also showed considerable flexibilities; 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!

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