Michael Porter’s Five Forces Analysis in Shipping Industry: Bangladesh Shipping Corporation Perspective

Mohammed Mojahid Hossain Chowdhury¹, Khandeker Rasel Hasan² and M Shahedul Islam³

Abstract
Despite having all sorts of competitive benefits of being only state-owned shipping company in the country, Bangladesh Shipping Corporation’s (BSC) overall position in the industry is not up to the mark. That’s why BSC is explored based on prominent Michael Porter’s five forces model. It is an exploratory research and the analysis is based secondary data. The study encompasses the attribution with the elements of the model and identifies the competitive areas of BSC in shipping industry. Some recommendations were proposed which entails if BSC is emphasizing on the good economic and political relation with its suppliers through government, efficient and effective ancillary services of shipping, appreciation of industrial shipping, proper application of new laws and sustainable as well as cost effective means of sea transportation, BSC’s position in shipping industry would be far more better than present’s.

Keywords: BSC, Michael Porter’s five forces, Industry, Shipping

Introduction
Industry is the production of goods or related services in an economy (Krahn & Graham, 1993). The development and competition of a specific industry depends on numerous factors. Industrial scientists always try to capture internal and external environment of industry to a framework. In 1979, Harvard Business Review (HBR) published “How Competitive Forces Shape Strategy” by a young economist and associate professor, Michael E. Porter. It was his first HBR article, and it started a revolution in the strategy field. In subsequent decades, Porter has brought his signature of economic rigor to the study of competitive strategy for corporations, regions, nations, and more recently, health care and philanthropy (Porter, 1979).

The history of shipping industry is as old as human civilization (Stopford, 2nd edition). In Bangladesh, shipping has been emerged as an important industry since Mughal period. Shipping has also proved its significance to overall economic

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development of Bangladesh (Ministry of Shipping, 2013). As this industry is flourishing, its present status and future prospects demand for systematic analysis.

Bangladesh Shipping Corporation (BSC) is the only state-owned shipping company in Bangladesh (Banglapedia, 2015). It has significant influence on the overall shipping industry of Bangladesh. Despite having monopoly benefits for being the public shipping corporation in Bangladesh, the corporation’s performance is neither commendable nor attracts the eye of shipping stakeholders. Thus an initiative has been taken through this study to analyse the position of Bangladesh Shipping Corporation in shipping industry based on Porter’s five force’s industry analysis.

Literature Review

Although there are various tools for analyzing the competitive environment such as Game plan, Value Chain model, PESTEL model and the Strategic group analysis (Porter, 1998), the researchers chose the five forces analysis model has been adopted in this study because of these five forces’ role in shipping industry. Porter’s five forces model of competitive analysis is an illustration of how the five competitive forces can be used to explain low profitability and viable entries to an industry (Hill & Jones, 2007). These Five forces are the threat of new entrants, buyer power, supplier power, threat of substitutes, and rivalry among the already established firms. The intensity of these forces highly determines the average expected level of profitability in an industry and its thorough understanding both individually and in combination which is beneficial in deciding what industries to enter, and in assessing how a firm can improve its competitive position (McGanan, 1997). The strength of each of the five forces is inversely proportional to the price and profits such that a weak competitive force may serve as an opportunity while a strong one may serve as a threat (Hill & Jones, 2007). Dalken (2014) proves the necessity of porter’s model in today’s economy and industry analysis though it’s an internet based economy. Indiatsy et al (2014) shows the porter’s five forces in banking industry and analyzes industry positions of Co-operative Bank of Kenya Ltd. Maresova and Kuca (2014) shows the porter’s five forces on medical device industry in Europe. Acar and Yurdakul (2015) evaluate the competitive power of shipping and logistics industry in Turkey. They show how the forces of porter’s model affect the competitiveness of logistics industry in Turkey. Halima (2014) explains the shipping industry in Bangladesh and its competitive and prospective forces in the context of maritime cluster and communities. The industry analysis of shipping in Bangladesh is not yet done. This paper aims to analyze the Bangladesh Shipping Corporations’ industry position.
Overview of Shipping Business in Bangladesh

There are three types of shipping services in shipping industry i.e. liner, industry and tramp services. In Bangladesh, these three types of shipping business are operated with the help of domestic and international shipping companies. MGH group has shipping lines which operate their business privately through Yang Ming Line, China Shipping Container Lines, Compania Sudamericane de Vapores (CSAV), Sitara Shipping Lines, Balaji Shipping Lines etc. East Coast Shipping Lines Ltd is one of the most professional shipping agents in Bangladesh. Since the beginning of East Coast Shipping Lines Limited, it has successfully handled 668 ships which include Oil Tankers, Bulk and Liquid Cargoes, General Import Cargoes, Heavy Lift Cargoes, Dangerous and Hazardous Cargoes Carriers in both the sea ports of Bangladesh (East-Coast Shipping Database, 2016). Ananda Shipways Ltd. is close to its extinction of operation. CMA CGM Bangladesh Shipping Limited is a shareholding subsidiary of French container shipping group CMA CGM which has captured a big market of shipping in Bangladesh. Summit Oil and Shipping Company Limited (SOSCL), an enterprise of Summit Group owns 6 coastal oil tankers with an accumulated carrying capacity of 9,600 MT (Consolidated Annual Report, FY 2015-16). HRC, a shipping company and also the largest private sector Bangladesh flag carrier with 9 container feeder vessels and a total capacity of 4995 TUES (HRC Shipping Particular, 2015). Deshbandhu Shipping Ltd., a sister concern of Deshbandhu Group is the owner of two ocean-going ships named MV. GOLAM-E-MOSTAFA & MV. DESHBANDHU-1. Bashundhara Logistics Ltd of Bashundhara Group has more than 25 coaster vessels and bulk careers which are used to transporting clinker, slag, gypsum, fertilizer, fly ash, cement, jute, rice, sugar, sand, limestone etc. from Chittagong/Noapara/Sylhet/Chatok to various inland riverine destinations. Under the banner of Comfort Group of Companies, there are some shipping lines which mainly conduct their shipping business under Bangladesh Petroleum Corporation. Kanta Shipping started its business with transportation of petroleum having 4 coastal oil tankers. Madina Maritime of Madina Group has four ships with a total capacity of 300 m. tons. United Shipping Lines is an important wing of Meghna Group of Industries which provides a comprehensive range of integrated cargo transportation & logistic services to MGI and also offers point to point cargo shipment facility and provides services in the offshore sector. The maximum shipping lines either private or public operate their business through Chittagong port as it is the country’s major gateway to international trade and perform about 92% of the maritime trade of Bangladesh. The listed shipping line-operators of Chittagong port is shown in the following table with its route, port rotation and deployed capacity:
Table 1: Listed shipping line-operators of Chittagong port

<table>
<thead>
<tr>
<th>Operator</th>
<th>Route</th>
<th>Port Rotation</th>
<th>Deployed Capacity (TEU) Total</th>
<th>Operator</th>
<th>Route</th>
<th>Port Rotation</th>
<th>Deployed Capacity (TEU) Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADVANCE CONTAINER</td>
<td>SGP/BGD</td>
<td>SIN/CGP/SIN</td>
<td>2384</td>
<td>MCC TRANSPORT</td>
<td>SE ASIA/BGD</td>
<td>PTP/SIN/CGP/PKG/PTP</td>
<td>2065</td>
</tr>
<tr>
<td>ADVANCE CONTAINER</td>
<td>SE ASIA/BG</td>
<td>SIN/CGP/PML/SIN</td>
<td>780</td>
<td>MCC TRANSPORT</td>
<td>SE ASIA/BGD</td>
<td>SIN/PTP/CGP/PKG/PTP/SIN</td>
<td>2916</td>
</tr>
<tr>
<td>ADVANCE CONTAINER</td>
<td>SE ASIA/BG</td>
<td>SIN/CGP/PEN/SIN</td>
<td>1876</td>
<td>OEL</td>
<td>LKA/BGD</td>
<td>CMB/CGP/CMB</td>
<td>1987</td>
</tr>
<tr>
<td>CMA CGM</td>
<td>SE ASIA/BG</td>
<td>PKG/PTP/CGP/PKG</td>
<td>1157</td>
<td>OEL</td>
<td>SE ASIA/BGD</td>
<td>SIN/PTP/CGP/PTP/SIN/PTP/SIN</td>
<td>2960</td>
</tr>
<tr>
<td>GOLD STAR/XPRESS</td>
<td>SE ASIA/BG</td>
<td>SIN/PKG/CGP/PEN/SIN/IN</td>
<td>2410</td>
<td>QC CONTAINER</td>
<td>SE ASIA/BGD</td>
<td>SIN/PTP/CGP/PTP/SIN/PTP/SIN</td>
<td>956</td>
</tr>
<tr>
<td>X-PRESS</td>
<td>SE ASIA/BG</td>
<td>SIN/PKG/CGP/CGP/PKG/IN</td>
<td>2936</td>
<td>SAMUDERA</td>
<td>SGP/BGD</td>
<td>SIN/CGP/PTP/PSIN</td>
<td>2967</td>
</tr>
<tr>
<td>HRC SHPP</td>
<td>BGD/LKA</td>
<td>CM/CGP/CM/MB</td>
<td>908</td>
<td>X-PRESS</td>
<td>SE ASIA/BGD</td>
<td>SIN/PTP/CGP/PTP/PSIN/IN</td>
<td>3020</td>
</tr>
<tr>
<td>HRC SHPP</td>
<td>MY/BGD</td>
<td>SIN/CGP/PSIN</td>
<td>1179</td>
<td>X-PRESS</td>
<td>LKA/BGD</td>
<td>CM/CGP/CM/MB</td>
<td>7884</td>
</tr>
<tr>
<td>HRC SHPP</td>
<td>SGP/BGD</td>
<td>SIN/PKG/CGP/PSIN</td>
<td>1020</td>
<td>YANG MING</td>
<td>SE ASIA/BGD</td>
<td>SIN/PTP/CGP/PTP/PSIN/PSIN</td>
<td>1095</td>
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<tr>
<td>HRC SHPP</td>
<td>SE ASIA/BGD</td>
<td>SIN/CGP/ML/SIN</td>
<td>528</td>
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</tr>
</tbody>
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Source: Drewry Maritime Research as of Jan 2011

Overview of Michael E. Porter’s Five Forces

The model of the Five Competitive Forces was developed by Michael E. Porter and is featured in his book “Competitive Strategy: Techniques for Analyzing Industries and Competitors”. It was published in 1980. Since that time the “five forces tool” has become an important method for analyzing an organization’s industry structure in strategic processes.

Michael Porter’s *five forces model* is based on the insight that a corporate strategy should meet the opportunities and threats in the organizations’ external environment. Especially, competitive strategy should base on an understanding of industry structures and the way they change (Porter, 1980).

Porter has identified five competitive forces that shape every industry and every market. These forces determine the intensity of competition and hence the profitability and attractiveness of an industry. The objective of corporate strategy should be to modify these competitive forces in a way that improves the position of the organization. Porter’s model supports analysis of the driving forces in an industry. Based on the information derived from Porter’s Five Forces Analysis, management can decide how to influence or to exploit particular characteristics of their industry (Porter, 1979).

- **Threat of New Entrants.** The easier it is for new companies to enter the industry, the more cut-throat competition there will be. Factors that can limit the threat of new entrants are known as barriers to entry. Some examples include i.e. existing loyalty to major brands, incentives for using a particular buyer, scarcity of resources and high fixed costs, government restrictions or legislation, entry protection (patents, rights...
etc.), Economies of product differences, Switching costs or sunk costs, absolute cost advantages. The major barriers to new entries are restriction by patents and brand identification (Bateman & Snell, 2004).

b. **Power of Suppliers.** If one supplier has enough strength to affect a company’s margins and volumes, then they hold substantial power. Here are a few reasons that suppliers might have power i.e. very few suppliers of a particular product, no substitutes, extremely important to the buyer, switching costs, degree of differentiation of inputs, presence of substitute inputs etc.

c. **Power of Buyers/ Customers.** If one customer has a large enough impact to affect a company’s margins and volumes, then it holds substantial power. Some basis due to which customers might have power is small number of buyers and purchases of large volumes, simple switching, extremely insignificant product, price sensitive customers, volume of buyers, ability to backward integration etc. The power of each buyer group depends on the attributes of the market situation and the importance of purchases from that group compared with the overall business (Alkhafaji, 2003).

d. **Availability of Substitutes.** Here are a few factors that can affect the threat of substitutes i.e. buyer propensity to substitute, relative price performance of substitutes, buyer switching costs, perceived level of product differentiation, fad and fashion, technology change and product innovation. Identifying substitute products involves searching for other products or services that can perform the same function as the industry’s products (Riley, 2012).

e. **Competitive Rivalry.** And last but not least, this describes the intensity of competition between existing firms in an industry. Highly competitive industries generally earn low returns because the cost of competition is high. Rivalry occurs when competitors sense the pressure or act on an opportunity to improve their market segment (Dagmar, 2001). A highly competitive market might result from many players of about the same size, no dominant firm, little differentiation between competitors’ products and services, a mature industry with very little growth, growing company by stealing customers away from competitors.
Assumptions made about the Porter’s model:

- That buyers, competitors and suppliers are unrelated and do not interact and collude
- The source of value is structural advantage (creating barriers to entry)
- The uncertainty is low allowing participants in a market to plan for and respond to competitive behaviour.

**Overview of Bangladesh Shipping Corporation**

The Bangladesh Shipping Corporation (BSC), a state owned and managed public sector Corporation, is the largest ship owner in Bangladesh was established on 5th February 1972 under President’s Order No. 10 of 1972 with the objectives of providing efficient, safe, reliable and economic shipping services to the local exporters, importers and business houses through sustainable shipping and ancillary infrastructures (BSC Annual Report, 2015-16). Now Bangladesh Shipping Corporation primarily provides shipping services on international routes. It also offers break bulk cargo carrying, chartering and tramping, feeder, crude oil carrying and lightening, food grain carrying and lightening, agency and ship repair services. The company operates a fleet of 13 ships, including 2 tankers that carry sea borne cargoes in various international sea routes. Bangladesh
Shipping Corporation provides its services to shippers, buyers, importers, exporters, and industries (Bloomington company overview: BSC, 2015).

Main Achievement of Last 3 Years (BSC APA, 2016):

Bangladesh Shipping Corporation exported 25,000 metric ton rice in Sri Lanka by own ship. A 28 storied building has made at amount of 63.03 crore taka by own capital of BSC. BSC has also modernize its own marine workshop by own capital which costs 8.50 crore taka. BSC has provided 16 female cadets “Sea Time Training” by its different ships.

Probable Achievement on 2016-2017:

- A contract has been made with Bangladesh-India Friendship Power Company (Pvt.) Limited (BIFPCL)
- Completion of evaluation of buying new product oil/chemical, crude oil tanker which is minimum 34,000 DWT

Porter’s Approach for Analyzing Bangladesh Shipping Corporation (BSC):

Now we will discuss about Bangladesh shipping Corporation (BSC), according to Michael Porter’s five forces model sequentially.

a. **Threat of New Entrant.** New entry to an industry may be happened at any time. Since shipping business is highly investment pulled that is why the new entry in this industry is difficult. But the existing foreign main line shipping operators and various domestics groups concerning shipping business such as Summit, East-Coast, Deshbandhu, MGH, Meghna, Bashundhara etc. are the threat for BSC. As the import and export trade of Bangladesh are increasing gradually in recent years, many foreign ship operators will want to operate their business in strategically way (e.g. alliance, franchise) as well as domestic shipping companies will weigh up their investment in this sector.

However, BSC is going to add 16 new ships in their fleet through G2G (Government-Government) contract from china by 2021 (The Daily Kalerkantha, 11th August, 2016). There is also an ordinance of national merchant flag vessel protection 1983 which protects the transportation of 40% of national trade through national flag ships. Once the new ships join the fleet for transporting cargo in Bangladesh, the market share will increase and new entrant will not able to affect BSC’s growth. The
Bangladesh Shipping Corporation Law 2016 which is passed (draft) by cabinet will provide to BSC of barring others to entry in public shipping industry (BD Barta, 2016).

b. **Power of Suppliers.** BSC bought maximum of its ships from China. Recently BSC and China Harbour Engineering Company Limited (CHEC) have been collaborated through a memorandum of understanding (MoU) to bring six mother bulk carriers and 10 light bulk carriers from China in the period of next two years. Here, 80,000 dwt (dead-weight-tonnage) will be the capacity of a mother bulk carrier while 8,000-10,000 dwt will be of a light bulk carrier (BSC: Key Development, 2016). It is to mention that, the government has good economic and political relation with China. So it is less likely that buying of new ships will be interrupted by other interested party. Rather china is considering Bangladesh a good client of selling ships.

c. **Power of Clients/ Customers.** BSC is the only shipping company in Bangladesh for importing crude oil to meet the countries demand. Government has stopped importing crude oil by private organizations for their forgery. There is no authentic alternative carrier readily available. That is why customers of crude oil transporter are obligated to use BSC tankers.

But, Alternative shipping operators are plentiful and they can avail the advantage because transport service of cargo by BSC is not in frequent service. However, BSC carries cargo (especially crude oil, grain) on the basis of cost of affreightment which refers carrying a specified amount of cargo within a time period in a fixed freight. New BSC ship will arrive soon and will be used to fulfil the demand of Bangladesh Petroleum Corporation, Coal Power Electricity Generation Company Limited, Bangladesh and others. Changing suppliers in shipping is not cost-effective to buyer. There is little risk about power of suppliers of BSC.

d. **Availability of Substitutes.** In Bangladesh more than 92 percent of cargo is transported by sea route (Alam, 2014). The other transporting modes (rail, road, air) have less significance to carry cargo in Bangladesh because it incurs much higher cost than that of waterway. So it is evident that there is no powerful substitute of maritime transportation. It is to be noted that BSC is the only organization who carries crude oil to fulfil country’s demand and this is one of the major export items of Bangladesh. So in one way there is no threat of alternative routes and at the same time BSC will enjoy absolute advantages in transporting crude oil.
e. **Competitive Rivalry.** The shipping industry has witnessed many challenges such as impact on high fuel price together with world economic slowdown. But sea-going vessels are considered as industry and have been given facilities similar for export industry by Bangladesh Government (BG Gazette Notification, 22nd August, 1994). The local industry does not have such disturbed environment and has immense opportunities for growth (BSC RPO Prospectus). There is no doubt that appropriate implementation of the merchant flag vessel protection ordinance 1983 can increase the revenue and market share of BSC. BSC is backed by the government. Whereas, private shipping companies are to face many challenges to compete with BSC though they have some core competencies of their own. Again, new act of BSC Law 2016 if enacted will provide BSC the privilege to acquire, charter, hold, dispose of ships and crafts within its scope. So it is apparent that BSC will enjoy the privilege of competitive of rivalry.

**Conclusion and Recommendation:**

In shipping industry, BSC has its sustainable locus based on five forces analysis. BSC by default of its structure, regulation and operation enjoys the benefits of having good industry position. But BSC has to prove this corporation as a major revenue generating organization of Bangladesh. That is why BSC has to emphasis to the trend and demand of the industry. BSC should take the benefits what it actually enjoys in the point of Michael Porter’s five forces. Considering different issues as analysed, this study proposes following recommendations:

a. BSC should buy ships from China on the basis of G2G project by using good political and economic relation.

b. The Bangladesh Shipping Corporation Law 2016 which has been drafted should be passed immediately so that BSC can enjoy other competitive benefits in shipping industry.

c. BSC should emphasis in container shipping so that the overseas and private companies cannot capture majority of shipping industry of Bangladesh.

d. BSC should give more importance of transportation services by sea route in a sustainable, economic and efficient way so that substitute of shipping cannot be a threat for it.
e. BSC should emphasis on the ancillary services to shipping so that it can grasp majority of the shipping related industry.

f. Inaugurate and increase the number of vessels in inland water ways so that BSC can capture the market of (Inland Waterways Transportation) IWT systems in Bangladesh and be able to connect itself with different terminals/ depots situated in Dhaka

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