

Opportunities and Challenges for Port of Colombo to become a successful hub port: Comparison of Port of Colombo's performance with the region

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Abstract

Over the past decades, major ports around the world have faced challenges due to significant changes in the logistical systems worldwide attributing to volume growth and increased demand. This situation led to rapid evolution in ship designing and marine technology to increase the cargo carrying capacity of the ship. In every wave of growth in ship size, ports were compelled to acclimatize with new demands in cargo-handling technology and operations. Today's trend of all main line operators deploying mega-container ships continues to force key ports around the world not only to replace the existing cargo-handling systems with longer out-reach third generation of post-panamax gantry cranes and other equipment, but also to design the ports infrastructure to accommodate and handle these mega carriers. Each subsequent generation of containership is facing a limitation in number of port calls since not many ports being able to handle such mega carriers. Main line operators are incited to use the largest containerships possible on their shipping routes, since they are benefited from economies of scale. However, ports and inland transportation systems have to provide substantial capital investment if they expect to accommodate larger containerships. There are thus operational limitations to deploy ships bigger than 8000 TEU's in terms of ports of call and the required infrastructure to provide an acceptable loading and unloading throughput. In the container trade, specialization meant ports were required to invest in modernized quay walls, deepening access channel, expanded basins, turning circle, water depth at berths, ship-to-shore quayside gantry cranes with longer outreaches, expanded land-side container storage yards, improved and automated container handling equipment, and on-dock rail transfer systems. Also, large containership deployments require an efficient feeder connectivity and substantial amount of cargo to be commercially feasible. The other related drive that affecting ports, is the features of country's integrated logistics system, reflected by an expanding network of improved inter-modal links based on the 'hub and spoke' system and the rationalization of overall logistics chain. This paper focuses on challenges and opportunities for Port of Colombo to become a Successful Transshipment Hub examining the empirical data and literature review of worlds' ports and container terminals.

Keywords: Marine Technology, Third Generation Post-Panamax, Integrated Logistics System, Inter-modal links, Hub and Spoke system

Introduction

The increasing number of containers and the mounting dimensions of vessels are adding stress to seaports to increase the capacity of container terminals. Ports are bound to respond with new terminals and added infrastructure facilities. According to Alphaliner, the worldwide reference in liner shipping states that around

78 percent of the 1.69 million of TEU of new ships slated for delivery in 2017 will be above 10,000 TEU's and more than half of deliveries will be ships of 14,000 TEU's and above.

The Port of Colombo has the potential to become as the 'hub port' in the region attributed to its strategic location, in the Far East to European gulf trade route. However 'Location' is becoming less important in modern days' highly competitive business environment where the technology is flattering as a determinant factor for shipping lines to cherry-pick the 'hub port' and to feed containers to and from other regional ports. As Jacob and Hall (2007) points out competitive advantage of terminal operators is increasingly based on the ability to integrate in logistics networks, to enhance the efficiencies within these and to extract value from them instead of solely focusing upon operational efficiency or location.

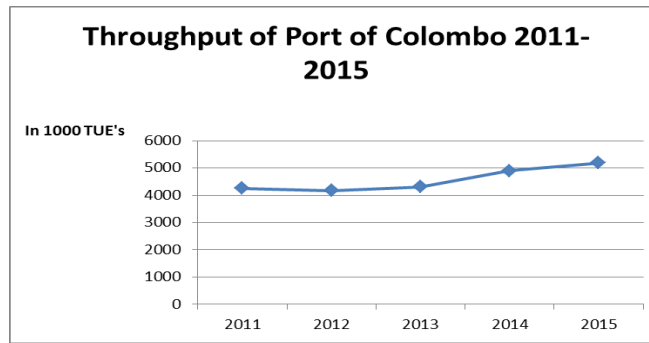
History of Port of Colombo evident over 2000 years for trading activities by Roman, Arab, and Chinese. (World port source) In 1505 the Portuguese discovered the Port of Colombo when first arriving to the island and subsequently established a trading post and built a fort in Port of Colombo in 1517. In 1638 the Dutch empire signed a treaty with King Rajasinghe the II of Kandy for monopoly over the island's trade goods and until 1796, The Port of Colombo was also the capital of the Dutch Maritime Provinces controlled by the Dutch East India Company.(Colombo Harbour Wikipedia) Modern Port of Colombo was initially built over 100 years ago by the British and Colombo Port Commission was established in 1913. Much of the city was planned during the British occupation of the Port of Colombo. Post-independence changes that took place in the Port of Colombo were histrionic. With the formation Sri Lanka Ports Authority in 1980, Port of Colombo underwent a major transformation in handling containerized cargo during 1980's and 1990's due to its strategic location amidst trade routes, and subsequently Port became more attractive to main line operators than any other port in the Indian sub-continent.

In 2008, the port commenced a large-scale expansion project at a cost of US\$1.2 billion, which expected dramatically increase the port's capacity and capabilities. Government of Sri Lanka (GOSL) has identified the expansion of Port of Colombo to cater the increasing demand of services in the international shipping industry. The project is situated west to the existing port of Colombo comprising an area of approximately 600 hectares. The new Port has 3 container terminals each having 1,200m length and facilities to accommodate 3 berths alongside. The Port of Colombo which had a capacity about 4.5 million TEUs expected to be increased the total capacity by another 7.2 million TEUs in three separate phases under this development. The new harbor basin has a turning circle of 800m, basin depth of 18m and two way access channels of 570m width and 20m depth. The project consist a main breakwater of 5.14km length, secondary breakwater of 1.65km length.

Problem Statement

According to Alphaliner China's ports grew 7.3% y-o-y and this trend continued further, with April 2017 throughput up 8%. Container throughput at 250 ports around the world grew by an estimated 6.7% in the first half of 2017, stated Alphaliner. South Asia reported the highest rate of throughput growth in the first half with 9.3%. Alphaliner also reported that the world's busiest container port, Shanghai, saw a 10% increase in throughput for the first six months of 2017, almost reaching 19.6 million TEU. Singapore was up 6.4 percent to 16.1 million TEU with Shenzhen third at 11.8 million TEU. Altogether, the 250 ports in Alphaliner's survey have a combined annual throughput of more than 550 million TEU. Despite the comparative advantage Port of Colombo is having over the other ports in the region as mentioned in the introduction, the growth in terms of volume throughput was relatively flat compared to other hub ports.

Figure 1



Source : SLPA statistics

Sri Lanka has carved out a niche linking feeder connections in the Indian sub-continent trade to main sea routes on the back of its access to the Indian Ocean, as it aspires to become a mega –hub port in the region. However, while the country’s ports and logistical capabilities have benefitted from significant investment, industry players face challenges, such as outdated Customs procedures, lagging behind on the use of e-commerce platforms. This further resulted in weighing on its performance to promote ease of doing business in Sri Lanka. At present transactions that could take place on an electronic platform happen through multiple layers of documentation presented to multiple agencies compared with Singapore or Salalah in Oman, for an example, which allows for online clearance.

There is a tremendous potential to develop entrepot trade with development of free zones with its value adding process and off shore businesses. At present the free ports closed to the Indian sub-continent are in Singapore and Dubai which cater to many locations world-wide. Sri Lanka has a unique opportunity to serve India and China, the biggest power houses in the region. However country is lacking human capital resources and essentially need a supportable and sustainable system not only on competency building but also to retain skilled workers who are tempted to sought overseas job opportunities.

Sri Lanka also needs wider industry reforms citing issues like inconsistency in tax policy, market caps on foreign shares (i.e.60% local ownership laws) and the minimum exchange control tariffs which requires company to collect and pay a levy ratified by the central bank to local agencies. One can argue that these measures may have the connotation to protect local firms and encouraging reinvestments. However, as the country strengthens its foothold as the logistics hub, demands rising to set for an internationally benchmarked investment environment that will reinforce the industry and entice more foreign investments. Moreover these thoughtless measures would only increasing costs compared to regional ports. World Bank’s Logistics Performance Index (LPI) provides the most comprehensive international comparison tool to measure the trade and transport facilitation friendliness of countries. Sri Lanka positioned 89th out of 160 countries in the ranking for 2014. A high ease of doing business ranking means the regulatory environment is more conducive to the starting and operation of a local firm. Sri Lanka ranked 107th out of 189 economies in the world for ease of doing business.

Literature Review

Seaports make very important contribution in competitiveness of the national economies. Cullinane and Song (2002) and Sanchez et al (2003) stated that seaports is a critical link in supply chain, highlighting the level of performance and productivity of the ports is very important at a rate that emphasizes affect the competitiveness of countries. Development of low performance levels in seaports, low cargo handling costs, obtaining the presence of integrated port services and other elements of a global distribution network is considered as highly important nowadays. With the globalization of national economies, demand is rapidly increasing transport

between continents. Caldeirinha1 et.al., (2013), describes containerization has stimulated shipping services globalization through the emergence of alliances and acquisitions in the liner industry (horizontal integration). Furthermore, intermodality has led to powerful global logistic door-to-door and other added-value service providers (vertical integration). For container cargo shippers and logistic chains, port and container terminal selection is made according to their location, proximity to/from the market, port charges, freight rates, turnaround time, cargo value and volume, liner services frequency and trade routes, although the decision often depends on the overall network service organization and not on the port or terminal per se Yap & Notteboom, (2011). Besides the port strategic location, shippers and shipping companies also look for port service reliability, service quality and lower costs per call, lower charges and short turnaround times Caldeirinha1 et.al., (2013).

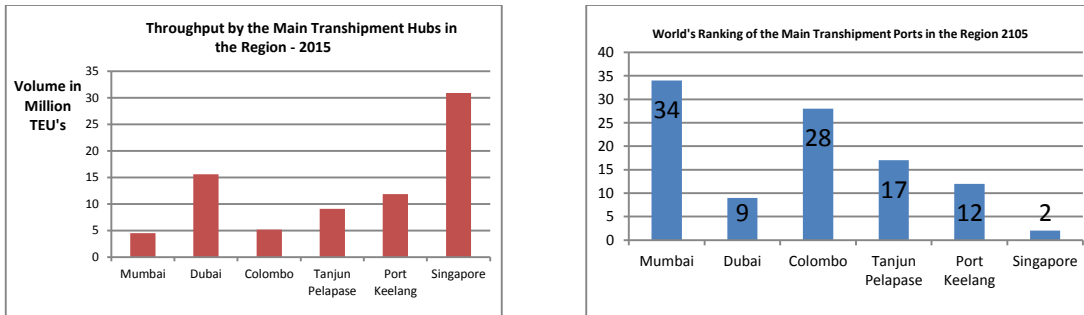
One distinctive feature of the contemporary container port industry is that competition between container ports is more intensive than has previously been the case. Cullinane and Wang (2006) Port markets used to be perceived as monopolistic due to the exclusive and immovable geographical location of the port and the unavoidable concentration of port traffic. However, the rapid development of international container and intermodal transportation has drastically changed the market structure from one of monopoly to one where fierce competition is rampant in many parts of the world. Many container ports no longer enjoy the freedom yielded by a monopoly over the handling of cargoes from within their hinterland. Instead, they have to compete for cargo with their neighboring ports. Ports are now not only competing with nearby ports, but also with ports relatively far away. For example, the Port of Gioia Tauro (South Italy, Mediterranean Sea) competes with the Port of Rotterdam (West Netherlands, North Sea) for the continental European market.

Once the integration of ports in the transport network had been recognized, the main challenge was the definition of the modalities of integration. (Trujillo & Tovar, 2007). The inclusion of ports, as interconnection points, is critical to the performance of intermodal transport within a multimodal infrastructure network. For instance, to reduce traffic congestion on land and to better interconnect continental- and peripheral countries and islands, the EC recommends the creation of a network of “sea motorways” which would be fully integrated in the European Transport Network.

Cullinane (2012) pointed out customer satisfaction is an effective variable. Paper discuss following independent variables such as Greater influence over port choice decision and competitiveness, Tailor-made solutions, Time in port of both ships and cargo as the output of the port production process, Control for congestion time to focus solely on handling efficiency, Better reflection of inventory costs to shippers, Allows for choice aspect of transshipment ports where speed of transit to feeders is primary concern to port choice decision maker, rather than cargo handling efficiency at berth. Caldeirinha1 et.al., (2013), (2013) highlights customer focus is a critical issue for container terminal performance, because terminals need to show flexibility/agility in adapting new requirements and market changes, making the necessary adjustments to meet increased customer demands.

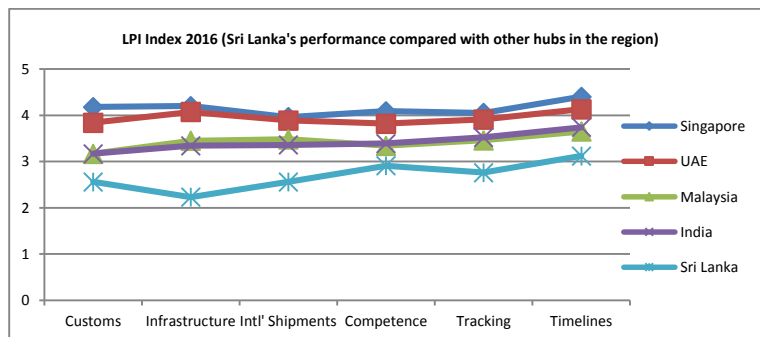
Comparison of Port of Colombo's performance in the region (with secondary data)

Port of Colombo ranked as 28th in the world's Top 50 ports by the world Shipping Council in 2015 - with the throughput of 5.18 million TEU's. However, when compared to the two adjacent ports situated on either side on the main east-west sea route, Singapore ranked no 2 with 30.95 million TEU's, and Dubai ranked no 9 with 15.6 million TEU's. Other regional ports listed ahead of Port of Colombo in the Top 50 were Port Keelang at no 12, Tanjung Pelapase at no 17. Javahal Neru Port Trust, Mumbai ranked at no 34 behind Port of Colombo in the Top 50 list in the year 2015.



Source: Data analyzed from world shipping council report

The Logistics Performance Index (LPI) is based on a worldwide survey of operators on the ground, providing feedback on the logistics “friendliness” of the countries in which they operate and those with which they trade. They combine in-depth knowledge of the countries in which they operate with informed qualitative assessments of other countries where they trade and experience of global logistics environment. The international LPI is a summary indicator of logistics sector performance, combining data on six core performance (The efficiency of customs and border clearance, The quality of trade and transport infrastructure, The ease of arranging competitively priced shipments, The competence and quality of logistics services, The ability to track and trace consignments, The frequency with which shipments reach consignees within scheduled or expected delivery times) components into a single aggregate measure.



Source: Data analyzed from LPI 2016

The LPI is constructed from above mentioned six indicators using principal component analysis (PCA), a standard statistical technique used to reduce the dimensionality of a dataset. The output from PCA is a single indicator which is a weighted average of those scores indicated in the LPI. Based on the scorecard, Sri Lanka is lagging behind in all 6 components compared to other countries in the region that are competing with Colombo for hub status. Sri Lanka is positioned 89 out of 160 countries in the LPI. Singapore ranked world's no 5 whilst UAE ranked no 13. Malaysia and India were ranked no 32 and 35 respectively.

Conclusion

Without infrastructure there is no connectivity. Without connectivity there can be no economic exchange. Without economic exchange there can be no growth. Without growth there is no prosperity. Without prosperity infrastructure cannot be funded. And so goes the cycle. Gal (2016) Without the necessary connectivity, quality and performance on the part of all transport networks, whether ports, inland containers container terminals, container freight stations, motorways, metropolitan roads, logistics cannot perform its role in delivering national

prosperity. Government also needs to act to promote productivity through investment in infrastructure and necessary actions to tackle resource and skills shortage and establish a framework to ensure that local transport and logistics policies work with the grain of business.

Study findings through literature review is consistent with Caldeirinha¹ et.al., (2013), “A better terminal management, logistic integration and attention to customer demands enhance and attracts more volumes and vessels.” In today’s context Port of Colombo has to compete with regional hub ports such as Salalah, Dubai, Singapore, Tanjung Pelapas and port Klang where the investments for these ports by major global terminal operators which enabled these ports to improve terminal productivity, marketing effectiveness and service standards at competitive price. To achieve the objective of positioning Port of Colombo as the regional mega hub-port to serve the key sea routes which are just 20 miles off the southern tip of the island, Sri Lankan policy makers needs to strategize and plan to develop multi-modal transport links, upgrade infrastructure, improve on ease of doing business, and simplify the tax structures, productivity improvements in all connected authorities through automation and elimination of non-value added barriers and an effective program to attract foreign direct investments. It requires a dedicated national task force consisting industry experts and a supportable framework to address the issues pertaining to lack of infrastructure, funding, and legislative constraints.

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