

SUEZ CANAL LOGISTICS HUB: COMPETITION AND CHALLENGES

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ABSTRACT

Suez Canal is continuously developed to accommodate modern ships where the ships draft reach 66 feet. The Canal has four doubled zones with six bypasses with overall length 193.3 km. It is providing the shortest route between Europe and Far East in terms of distance, fuel consumption and operating costs. This allows the transit of ships in both directions and attracting more shipping lines and shippers. However, alternative routes to move trade from North West Europe to Far East have taken place including Panama Canal, Northern Sea Route (NSR) and Cape of Good Hope. Hence, the Egyptian government has recently set executive steps for a national project that aims at developing the Suez Canal zone to become one of the world's leading logistics hubs. Hub became in recent times essential for improving traffic as it provides shipping lines with adding value logistics activities and services. The purpose of this paper is to discuss how Suez Canal can be further developed as international hub to remain monopolistic position for world trade?

KEYWORDS

Adding value logistics activities, logistics hub, Suez Canal competitive routes

INTRODUCTION

The Suez Canal is an artificial sea-level waterway in Egypt, connecting the Mediterranean Sea and the Red Sea as shown in Figure 1. Since opening in 17th November 1869, it allows transportation by water between Europe and Asia without navigation around Africa. The northern terminus is Port Said and the southern terminus is Port Tawfiq at the city of Suez. When first built, the Canal was 26 ft deep. After multiple enlargements, the Canal is 66 ft deep. The Canal is a single lane with six passing places. It is the longest Canal in the world without locks; seawater flows freely through the Canal. The Canal is owned and maintained by the Suez Canal Authority (SCA) of Egypt. The accidents are almost nil compared with other waterways, and where navigation goes day and night. Geographically, it lies on a unique site where hosting 8% of the world sea-borne trade in 2012 with annually earning almost \$5.2 billion per year.

Suez Canal Importance

The Suez Canal is considered to be the shortest route between the East and the West due to its unique geographic location. It plays an important role in serving international trade as it achieves a saving in distance, time, fuel consumption and ship operating costs. Table 1 shows for example the saving distance between main ports using Suez Canal route compared with Cape route.

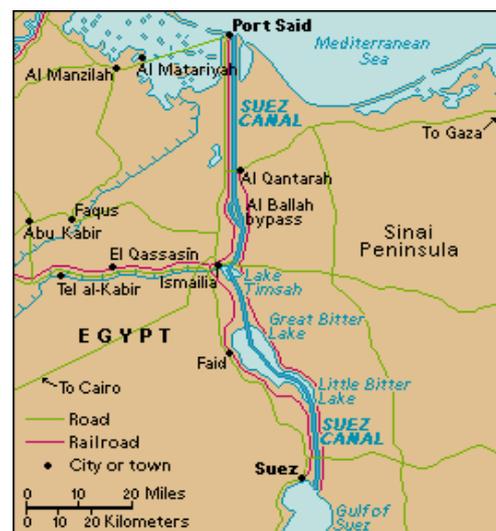


Figure 1: Suez Canal

From	To	Distance With nautical Mile		Saving	
		Canal	Cape	In Miles	Percentage
Ras Tanura	Constanza	4144	12094	7950	66%
Jeddah	Piraeus	1320	11207	9887	88%
Singapore	Rotterdam	8288	11755	3647	29%

Table 1: Saving in distance between Suez Canal and Cape

Suez Canal is the longest canal in the world without locks. The width of the navigational channel is between 200 m and 210 m and ships of about 20 m draft can pass through the Canal. The Canal is liable to be widened and deepened when required, to cope with the development in ship sizes and tonnages. Table 2 shows the Canal characteristics.

Description	Unit	2012
Overall Length	Km	193.3
Doubled Parts Length	Km	80.5
Cross Sectional Area	m ²	5200
Max. Permissible Draft	Feet	66
Max. Tonnage (DWT)	1000 tons	240

Table 2: Suez Canal characteristics

Suez Canal and World Sea-borne Trade

Technological development and scientific research has led to a rapid growth in international trade and the exchange of products between countries (Siebert, 1999). The developed economies witness an expansion in imports and exports by 11.5% in volume terms, while the rest of the world increased by 16.5% (WTO, 2010). The demand for seaborne trade is derived from the demand for international trade (Lun et al., 2010). In fact, about 90% of world trade is transported by sea in volume terms and almost 80 % in value terms (Zouari and Khayech, 2011). The importance of Suez Canal is getting augmented with an increase in demand on maritime transport and world trade. The Canal has the capacity to accommodate up to 25,000 ships per year. In 2012, the Canal accounted for 8% of the world trade as shown in Table 3.

Years	World Trade (M.Ton)	Suez Canal Traffic		
		No. of Vessels	M.Ton	SC share %
2008	8238	21415	723.0	8.8
2009	7838	17228	559.2	7.1
2010	8591	17993	646.1	7.5
2011	8947	17799	691.8	7.7
2012	9297	17225	739.9	8.0

Table 3: World Sea-borne Trade Development and Suez Canal share (2003– 2012)

Ship Type Distribution in Suez Canal (2011 – 2012)

In 2012, there were 17,225 ships passed the Canal, compared with 17,799 ships passed the Canal in 2011, with reduction by -3.2 %. There was mainly a decrease in LNG ships by -26.1%, container ships by -11.8% and passenger ships by -10.4%. Figure 2 shows the ship type distribution passing the Canal in 2012.

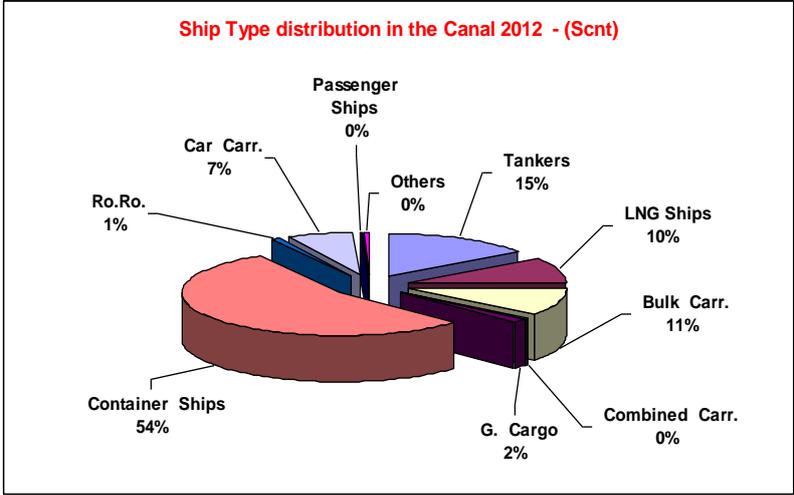


Figure 2: Ship Type Distribution Passing the Suez Canal in 2012

Suez Canal role in Asia-Europe trade lane diminishes by years due to high charges, security reasons caused by piracy acts and changes in world trade patterns. Findings conclude that challenge exists by changing economic geography in world trade such as growing new trade areas including South America and South Africa. The following section discusses the competitive routes facing Suez Canal.

However, with a reduction in number of total ships passing the Canal, there were more than 77.8 % of Europe-Far East container trade transiting Suez Canal in 2012, and more than 86.6% of Europe and Middle East/South Asia/Far East container trade transiting Suez Canal in the same year (SCA, 2013). Also, the container trade route between East Coast of North America and Far East through Suez Canal is a fast growing route with growth by 28.1% on average yearly (3.1 million TEU in 2012 compared to 0.7 million TEU in 2006) (SCA, 2013).

A REVIEW of SUEZ CANAL COMPETITION

A group of alternative routes are competing with Suez Canal. All alternative routes can be grouped into three groups including sea routes, road and rail routes and oil and gas pipelines (Galall, 2013). Firstly, the sea routes include Panama Canal after expansion (2015), Northern Sea Route and Cape Route. For Panama Canal after expansion in 2015, the draft will raise to 50 feet attracting most of Post-Panamax ships with total capacity of 12000 TUE. For Northern Sea Route (NSR), it is the shortest route between North Europe and Far-East. However, it is only seaworthy for four months per year and those ships passing this route cannot carry more than 20,000 tonnes. For Cape Route, Galall (2013) argued that this is an alternative route in case of closing Suez Canal rather than a competitive route.

Secondly, the road and rail routes include Eilat– Ashdod Rail Way and Euro-Asia Bridge. Eilat– Ashdod Rail Way relies on trucks for moving containers from Eilat to Ashdod and it takes from 6 to 12 hours. This will result in extra cost and time and it requires connected terminals in both ports. The second alternative route is the Euro-Asia Bridge that connects Rotterdam port with Liaynyngang in China passing through 30 countries, saving distance by 9000 Km.

Thirdly, the oil and gas pipelines include Eilat-Ashkelon pipelines that connects Ceyhan Port in Turkey with Eilat and Ashkelon pipeline in order to export Central Asian oil to Indian and China bypassing Suez Canal.

Notteboom (2011) claimed that the Suez Canal role in Asia-Europe trade lane diminishes by years and he recommended Cape route as a competitive alternative to the Suez route. He claimed that the first challenge appears in shifting piracy acts from Malacca to Gulf of Aden. An increase of these threats has led to increase the insurance fees. The second challenge exists that the Canal has a finite and full capacity that cannot accommodate future demand of transit vessels. The third challenge is presented in the presence of routing alternatives to the Canal, namely the Northern Sea Route, North South Land Corridor and the East-west Rail Corridor. The fourth challenge is that there are different routing alternatives for the trade traffic between USA and Asia, including US West coast ports and rail network and Panama Canal. The final challenge exists by changing economic geography in world trade such as growing new trade areas including South America and South Africa.

As competitive routing alternatives to Suez Canal, Schoyen and Brathen (2011) identified alternative routes to move from North West Europe to Far East, namely Panama Canal, NSR and Cape of Good Hope. Despite the navigation distance from West to East via Northern Sea Route (NSR) is shorter than Suez Canal by 40%, the NSR is suffering from uncertainty in schedule reliability that might fit tramp ships rather than liner shipping and seasonality where the ice-free season has increased to 129 days instead of 89 days (Rodrigues, 2008). However, they focused on tramp shipping rather than liner shipping. The focus was on bulk trade rather than other types of cargo. Also, they did not consider these challenges facing NSR such as requirement of powerful ice-breaker fleet, strong diesel electric vessels, a lack of ice-breaker capacity, high fees of ice-breaker, the fees are not linked with the actual services rendered, potential changes in the Arctic environment due to accidents and operations, and conflicts in coastal state regulation between Russia and Canada, USA and Norway (Ragner, 2008).

It can be concluded that there is a number of alternative routes facing Suez Canal since its opening in 1869. These routes place the Canal in competition for attracting sea-borne trade. Remaining as a competitive choice, Stopford (2009) identified five factors of product differentiation in shipping that is linked with route choice; price, speed, size, security and reliability.

RESEARCH PROBLEM

The discussion of the previous section shows a number of qualitative conclusions on perceived competition to provide routing alternatives to the Suez Canal. The question rises in this paper is how *Suez Canal can be further developed as international hub to remain monopolistic position for world trade?*

SUEZ CANAL AND LOGISTICS HUB

Logistics hub has different forms (Nam and Song, 2011). From the logistics perspective, it can be a distribution centre. From freight transport perspective, it can be a freight village (logistics node). From facility location perspective, it can be logistics zone (free trade zone). From maritime logistics, it is often referred to as a process of planning and managing the flow of cargo and information with ocean carriage being involved. Notteboom (2002) claimed that the maritime logistics hub is concerned with individual functions relating to sea transportation as well as an effective logistics flow as a systematic entity of the logistics integration system. Nam and Song (2011) explained that the maritime transport has three players namely; shipping companies, port operators including value adding services and freight forwarders. Huang (2008) pointed out that the criteria to be a hub is not throughput cargo rate but the transshipment cargo rate. The following section discusses the current and proposed value adding services at Suez Canal that leads to international logistics hub.

Transferring the Suez Canal region into an international Logistics Hub is based on developing six pillars namely, transport, trade, tourism, renewal energy, human development and industrial complexes. Three governorates are located alongside the Canal that can help in developing these pillars including Suez, Ismailia and Port Said governorates. In Suez, the Suez Canal Container Terminal is planning to provide modern handling and operating systems for all transiting vessels using advanced technology. In Ismailia, three projects are proposed including dredging tunnel under the Canal, establishing the valley of technology and establishing industrial and logistical areas at West of the Canal. In Port Said, a construction of new quays at Port Said East Port is proposed with overall length 1200 m and width 500 m, accompanied with establishing double rail lines connecting the port with its hinterlands. The SCA aims to provide value adding logistics activities in these governorates. The following section reviews the current and proposed logistics activities.

Review of Current Value Adding Services at Suez Canal

Suez Canal can be transferred from cargo gateway to a logistics hub. Optimising operations, interface with complex transport, improving performance, reducing customer lead times, reducing prices, offering a wide range of logistics activities, integrated with supply chain and reduce wastes are required leading to an international hub. The Suez Canal has currently a number of value-adding services (VAS) that helps to strength its competitive position.

Firstly, the Canal has two shipyards namely Port Said Shipyard (PSS) and Port Tawfik Shipyard (PTS). The PSS is a leading shipyard in Egypt and it has a unique strategic place at the northern entrance of Suez Canal giving it a great privilege to attract many transiting ships for repair purposes, building of different floating vessels, different ship types, dredgers and tugboats. On the other hand, PTS has a unique strategic place at the southern entrance of Suez Canal. PTS provides repairs and building of medium and small floating units.

Secondly, the Suez Canal is provided with a fleet of 12 multi-type dredgers, a fleet of 35 multi-type tugs ranging used for towing, salvage, fire-fighting and berthing of ships. Also, it is provided with a fleet of 35 cranes.

Thirdly, Suez Canal has seven affiliated companies in different fields to support all activities alongside the Canal. (1)The Canal Mooring and Lights company is responsible for mooring and unmooring of vessels transiting the Canal. (2)The Canal Naval Construction company is specialised in building, repairing floating unit, ship modifications, petroleum service, medium size engine repairing and ship scraping. (3) The Port Said Engineering Works company is specialised in repairing and building small motor vessels and tugs. (4)The Canal Rope company is the biggest producer in Middle East for all kind of ropes and twines natural or synthetic and woven bags. (5)The Canal Harbour and Great Projects company is specialised in Marine Works and in Quarrying. (6)Temsah Shipbuilding company is specialised in shipbuilding, ship repairs, operation and maintenance of all kinds of auxiliary ships and water desalination plant. (7)Suez Shipyard company is specialised in ships repair, shipbuilding, steel structure, pipe lines, tanks, marine services and repair dredging equipment.

Proposed Value Adding Projects Leading into International Hub

The hinterland of the Suez Canal region is relevant to accommodate new value adding projects, leading to be one of the most successful logistics areas of the world. Firstly, the Cold Logistic Park project is proposed to support the cold chain trade transiting the Suez Canal (Kotait, 2013). The project offers the perishables industry access to growing markets in the Middle East, high quality and cost effective trans-shipment, consolidation, and storage, packing and distribution activities. It is proposed to establish Container Park with full cold chain facilities.

Secondly, another project is applying the River Information Services (RIS) for logistics purposes (Gehlhaar, 2013). RIS is an intelligent IT solution that can assist SCA in their daily operations. RIS's objective is improving the integration of inland waterway transport through the Suez Canal into intermodal chains. It is not only a classical information provision, but it is also a Tailor-made proactive information services following the approach of Supply Chain Event Management (SCEM). Also, RIS system aims to integrate terminals alongside the Suez Canal in order to align the processes between sea ports, inland waterway transport and inland ports.

Thirdly, new container hub ports are emerging in the Suez Canal. The Suez Canal Container Terminal is located in Port Said, at the northern tip of the Canal, handling 3.1 m TEU in 2011. It includes a series of free zone areas, with planning to establish logistics and distribution centres in future. Sokhna Port is another container hub that is located in southern entrance of the Canal. It handled 0.6 m TEU in 2011 with future expansion in capacity.

Fourthly, the Establishment of Sinai Canal is recently proposed and discussed (Kamel, 2013). The proposed Canal aims to link Mediterranean Sea with Aqaba gulf, in parallel to Suez Canal. It aims to develop Sinai Peninsula and attracting more investment in logistics and adding value activities such as production, storage and transshipment. There are key ports that located in North and South Sinai that can play important role in developing the traffic in the proposed Canal, including Arish port in Northern Sinai and Taba Port in Southern Sinai. Three logistics centres are proposed to be established alongside the Canal. One centre to be located in the West of the Canal for building and repairing all types of ships. The second centre is for storing and re-exports purposes, supporting transshipment industry. The third centre is for production projects. Agricultural hinterlands are proposed in all centres.

Fifthly, a proposed plan up to 2020 has been set by the Egyptian government for establishing a set of bridges and tunnels crossing the Suez Canal. For example, Ferdan Bridge is proposed to be the longest movable bridge in the world. Salam Bridge is for 5.9 Km enhancing the flow of cargo and passengers movement. Ismailia tunnel is proposed for 0.9 Km to link both sides of the Canal. A railway lines are proposed for 1200 m crossing the Canal.

Also, it is proposed to establish a complete separate entity, a regulatory body, to manage and operate the Suez Canal Hub. Its responsibility is to deal with all involved ministries and agencies in Egypt & abroad, applying the international standards. It is suggested to apply non-bureaucratic procedures and to establish three sub entities in each zone (Port Said, Ismailia and Suez). It is proposed that this body would be responsible for organizing competition and Preventing monopoly, improving proficiency, increasing productivity, preparing human resources with required skills, Managing commercial conflicts and disputes and attracting investments.

Finally, transferring Suez Canal from cargo gateway to international hub is a future requirement to accommodate the expected growth of China-NAAC container TEU trade to 14.3 m TEU in 2030 compared to 4.1 m TEU in 2010 (Ghonima, 2013). Presently the major segment of this traffic move via the Panama Canal. A much smaller portion, move via the Suez Canal, mostly to U.S Ports. Potential future diversion of 1.2 m TEU to the Canadian Atlantic Port of Halifax via the Suez corridor could develop due to water depth and the ability to develop incremental and terminal capacity to efficiently handle SPPX vessels.

DIFFICUTIES FACING The DEVELOPMENT OF THE SUEZ CANAL HUB

For remaining a monopolistic position in sea-borne trade, there is a need to develop the Suez Canal region. This will help to attract more shipping lines and shippers through providing value adding logistics activities.

However, the development process is facing many challenges that can be summarised as follows: (1) more than 50% of the region are difficult development areas according to the nature of topographic of Sinai as shown in Figure 3. (2) The region is suffering the lack of many basic services such as education, health care, trade and the absence of industries. (3) Urban problems caused by unbalance between population growth and population areas. (4) Poor communication and links between the Eastern and Western Banks of the Canal. (5) Peace agreement's conditions make the region is not attractive for investment and limit the possibilities of the exploitation of the region. (6) Difficulty to influence the demographic variables that are related to religious values and social and environmental habits, which cannot be changes. Multiple cultures make habits fundamentalist restrictions on development. (7) Huge investments are needed to meet the requirement of the region development. Most financial institutions, whether local or international, elude the required funding. (8) The population in the Canal region is about 9 million, where the unemployment rate is 9.7% in 2012. The following section provides some suggestions to cope with these difficulties.

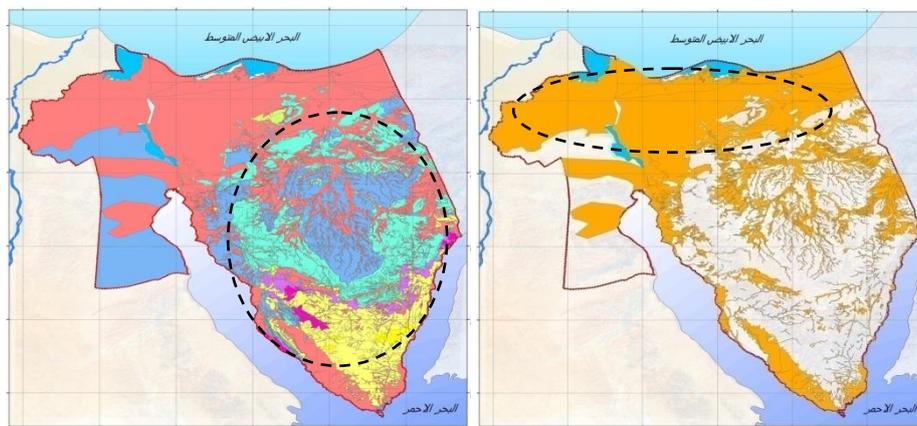


Figure 3: The Topographic Nature of Sinai

RECOMMENDATIONS

Suggestions are proposed to be carried out in the future. (1) It is recommended to deep the Canal in future to 72 feet in order to be able to accommodate maximum capacity of 340,000 DWT. (2) Also, most the Canal is limited to a single lane of traffic. Thus, it is recommended to deep the Canal's six bypasses as this will allow transit of ships in both directions. (3) Reviewing the competitive pricing policies applied by other competitive routes is suggested. (4) Increasing the national projects in the region to attract more investment. (5) Re-distribution and push the population onto remote areas in the region. (6) Focus on the region's competitive advantage is required in the fields of energy production and tourism. (7) Raise the standard of living and household income. (8) Six governorates can play an important role in developing the Suez region, including Sharqia, Ismailia, Port Said, Suez, North Sinai and South Sinai. Coordination and integration between these governorates are highly required.

CONCLUSION

Suez Canal has a competitive advantage facing exiting and developing alterative and competitive routes where all types of ships with maximum capacity of 240,000 DWT and 66 feet draft can pass the Canal. Pricing policy applied by SCA plays an indispensable role in attracting more ships. Difficulties are existing facing the development of the Suez Canal region. However, the Canal has value adding services that can be expanded to cope with an increase in sea-borne trade. Proposed value adding services are discussed to transfer the Suez region into international logistics hub.

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