

## **THE COMPETITIVE ADVANTAGE OF SEAPORTS AND APPLIED TO THE EAST PORT SAID - PORT SAID**

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### **ABSTRACT**

The globalization affects the world container production in the global economy and led to a significant increase in the transportation industry. This change has led to a large extent in the maritime transport and shipping. In the other hand, the competition between countries and regions economically. Which it caused the information revolution, and the role played by global political events that painted a new form of business climate at all levels, resulting in the emergence of new policies to address these challenges by operators and seaport authorities.

The port competitive become in the top of the topics that received the attention of port operators and authorities, especially after the growing role of ports in foreign trade operations of the States, which resulted in his excellence as influential in the economies of countries and their development. And based on this work was a study on the practical application of the East Port Said - Port Said port and improve the performance in terms of productivity during the recent period compared to the ports of the Mediterranean Sea.

**KEYWORDS:** Seaports, Advantage of Seaports

### **INTRODUCTION**

Become a subject of competitive port in particular of the topics that received the attention of port operators and authorities, especially after the growing role of ports in foreign trade operations of the States, which resulted in his excellence as influential in the economies of countries and their development. Became the competing ports in the context of a world governed by global economies are intertwined, and through mergers and alliances and control Mergers / Acquisition /Alliances. Which prompted the authorities and port operators, to consider a restructuring of its competitiveness, and to match the variables surrounding the management and operation of ports on the local, regional and international levels? Therefore, the port has become a competitive threat to external institutions and authorities working port, developed states are racing to compete and win the largest share of the market, while developing countries are still preparing for the restructuring of its ports in the context of building its economy. And based on this work was a study on the practical application of the East Port Said - Port Said port and improve the performance in terms of productivity during the recent period compared to the ports of the Mediterranean Sea. (World Bank, 2011)

### **THE COMPETITIVE ADVANTAGE OF SEAPORTS**

#### **The Concept of Competitive Advantage of the Port**

The concept of competitive advantage for the port has been affected by the information revolution and the global events has played outstanding role to setting out a new form of the business agenda at all levels, which has led to the emergence of new policies to meet these challenges by the seaport operators and the seaport authorities. It requires foresight to read the features objectives, change results and Mobility of global economic environment, it request thinking

from those management based and ports operation in the development of structural commensurate with such developments.

No longer the traditional patterns; for the port operation leading to the generated the productivity and the creation of excellence in the port performance, making the method concept providing low-cost service, or go to the perspective of Economies of Scale, it is useless to create the port competitiveness, but it has become more sophisticated through the orientation to Customer Oriented Services, to create added value and the competitive position strengthening, improve the business environment to ensure the port competitiveness strengthening.

### **The Definition of Competitive Port**

The port competitiveness concept has been involved in the changes in the global economy with directly way, as a result of the reorganization and the distribution of workforce, capital, and through the front and back integration for the markets globalization, this link coincided with the growing tendency towards dynamic and mobility. This has changed the sea ports landscape, whence the port organizational structure, plans, strategies and work methods.

Ports are one of the most important element of the shipping process, and Vital Node in integrated logistics chain, this is the focal point will meet the outputs and inputs of overlapping logistics operations, this is developed the port role than the traditional center status of the transfer, to the status of industrial and logistical integrated with Global Supply Chain, and become an Integrated Cluster. Forced operators and port authorities to prepare the future plans in competitive environment, context strategies consistent with the global economy variables, a willingness to confront the parties compete, and the abandonment of reliance on the comparative advantages, for policy low pricing and new infrastructure, to gain a competitive advantage, and that decision must be oriented to provide added value to customers services, and try to understand the requirements, Look forward to the strategies level current and future; to develop the measures, plans and strategies able to provide excellent service to customer. (Huybrechts .2002)

In order to ensure the port to create a sustainable competitive advantage Sustainable through dynamic movement of the components of the operation and management (as and quantity), had to study and analyze these elements in order to be a tool for creating competitive strategies, and to achieve the vision and mission of the Foundation Vision and Mission, and to ensure the development of determinants that help to create excellence competitive, which leads to the provision of complementary and interrelated, port users, which seeks to obtain it . Where the subject of competitive port has received international attention and developed studies and research to develop the concept of competitive ports, in order to play a pivotal role ports required by the movement of international trade, and to the ports of a profound effect on global economic indicators.

These events led to the generation, creating a competitive environment at the local, regional and global levels, change depending on the general appearance of a competitive port Competitive Landscape, to become the seaport most important link a central revolve around transportation and logistics International Integrated Global Supply Chain Multimodal Transport, Ports are marine, like all the tools the state's economic they are part of integrated elements and sectors of the national economy, and thus affect and are affected by the economic process of the States directly.

The study considers a competitive port by working in the following levels:

Competition between port operators per	Port Undertaking
Competition between ports	Between Ports

### Competition between port authorities                      Port Authorities

Indicated that the factors that affect the competitiveness of the port varies from one level to suit another, and according to previous levels. As determined by the competitiveness of operators per port basis on the factors of production, labor, and capital, and the use of technology, while the rest of the levels of competition, classified according to the elements converge in the characteristics and advantages, due to its interaction with the following factors:

- Geographical Location.
- Infrastructure.
- Level and the ability of the supporting and related industries, and the size of the activities of the back, and government policies are successful.

Despite the multiplicity of methods and means that work on measuring the rates of performance of the port, and productivity through the indicators of financial or operational, but it cannot be confined to one factor or several factors, but that the issue requires consideration in a comprehensive manner, especially when the competition between ports. As a competitive port is affected by many variables, shipping liner and the cost of recharging Transshipment and handling charges, storage, and the level of management and expertise possessed by operators of port and powers, except for the level and volume of use of electronic data interchange EDI, and the generating activities of value-added, and the direction and rate of government intervention in the activities of the port. (Huybrechts .2002).

### **Change the Functions of the Port**

The continuous change in the traditional models of the work ports, led to a change function port drastically, except for development which occurred in international trade, and freedom of movement of elements of the process of international trade, and complexity of relationships, it led to all the parties to become key factors in creating competitive advantage. The study provides the UNESCAP classification shows the stages of port services through the generations linked to the development strategy completed, and the efficiency of trade policies for port operators which showed the evolution of generations of ports, and the characteristics of evolution in a changing pattern of operation, the only services a traditional exercise of the activities of loading and unloading of goods, storage, and connectivity between the means of transportation, lack of focus on other elements related to improving the optimal use of the port. And then transition to the second generation, and unique evolution of the port into a center for industrial and commercial activities, and try to connect and understand the relationship between the port and its surrounding environment, through the activation and the formation of relationships with local authorities, and to understand the requirements and needs of customers. (UNESCAP, 2002)

While the third generation to lay the first foundation in modern ports, take the port as an integrated transport, links between modes of transport and logistics operation of international trade, and directed a strategic port for customer service, and analyzing the surrounding environment to the work of the port, and complexity of relations with stakeholders in general, and the use of modern technologies.

While another study has provided a model of the fourth generation of the ports of Fourth Generation, where she described as The Network Ports complex, and identified arise after 2000.

(Gaur .2005)

Showed that the fourth generation of the ports; characterized by its competence in the handling of custom type of goods and interfere with the industry, and also characterized by being a logistics center and distribution point for goods, and compatibility in the economies of scale, the economics of the diversity of the field of activity, and use of information exchange Information Sharing.

In the scene to talk to the competitive port Competitive Landscape, has become the concept of entanglement between ports more clearly, where the varied terms of reference port on the global level, and the harbor is now a center for logistics integrated, linked industries, supporting and related, and in turn the work of shippers, cargo owners, carriers and stakeholders, and includes the concept of trade with agencies State government Agencies, based on the integrated electronic system, and to develop strategies to achieve integrated with other ports.

### **Determinates of Seaport Competitive Advantage**

The globalization of production; and the emergence of the role played by the network transport chain at the global level, had a deep impact in consolidating and strengthening the position and the importance of sea ports as a center and gathering point for the system, International Logistics, which has become seaports constitute a link Nodal Points pivotal revolves around the operations of a series of global transport Global Supply Chain, where the ports are facing direction over towards the establishment of logistics centers and free zones Ftzs, which forced the port authorities and operators to update its system logistics; to address the threats that surrounds the management and operation at all levels; and re-structuring of the strategic planning process to achieve the competitive edge. (Badawi.2003)

As the liberalization of trade and services may impose many of the challenges and opportunities for operators and port authorities and neighbors to, making reliance on the traditional elements to create a competitive advantage, such as location geographical location for example, does not work to earn excellence, but is required to study and analyze the most comprehensive to cover all the parameters and the various activities of assistance, which became seaports suffer from the pressures and threats and, increasingly, of them. (World Bank, 2011)

- The requirements of global market forces innovation and specialization in the transfer of containers.
- Development strategies and development from the local national forces, and its relation to the role of sea ports.
- Progress in addressing the growing global methods of shipping and cargo transport, seaports forced to evolve accordingly.
- Near the port of the centers of production or consumer markets, is a key factor for the pressure on the port, to prepare strategies and strategies that correspond to these centers.

The competitive landscape of the port has changed radically, and seaports to re-assess the management and policies which ensure client retention, and work toward the market and customer service. As the business environment Business Environment surrounding the work of ports under increasing factors that impose limitations compete more complexity and comprehensiveness of the determinants of macroeconomic and microeconomic Macroeconomic & Microeconomic, as the underlying determinants of the choice of the port there are multiple and in accordance with the trends and features of the policies of international transport, and may be determinants as quantitative or qualitative quantitative or Qualitative, quantitative parameters were summarized in the following factors:

- Factors affecting the paths liner.
  - The factors that affect the cost element.
  - Service factors.
- While the quantity determined in accordance with the following points:
  - Flexibility and ease of handling.
  - Marketing efforts of the port.
  - Norms prevailing in the port.
  - Reputation enjoyed by the port.
  - The level of cooperation with the port shippers.

Despite the limitations link qualitative and quantitative, but distinguished between the two is often vague, especially from the viewpoint of port users and the operators of the port. Tongzon study found

That the determinants of port choice can be summarized in the following factors:

#### Frequency of Ship Visit

- Port Efficiency
- Adequacy of Port Infrastructure
- Geographical Location
- Competitive port Pricing
- Quick Response to Port Users Needs
- Cargo Damage Reputation. (Tongzon .2002)

Although the port geographical location is important and a key link Nodal Point, it is not an only factor but it must to integrated with the other factors that have achieved excellence in the port, through the port important for the maritime liner, and the port near the site of the industrial centers, marketing and the entrances of corridors Marine, The Port Said Port and Algeciras example in the Mediterranean Basin that held them to study. As for the quick response to Port Users Needs, this is achieved through follow the market-oriented policies and customer service, and creation of interlocking relationships with clients. Understanding them requirements in the dialogue context and integration, while the port earns good reputation in accordance with the use of modern techniques in dealing with the methods of loading and unloading, so as not to claims arising against the port, due to reasons related to Cargo Damage. (Murphy. 1991)

### **STRATEGIES TO ACHIEVE THE PORT COMPETITIVE ADVANTAGE**

The sea ports live in the contemporary world the phenomenon of the increasing competition between ports, and the role played by the dynamic of market change, that forced the port operators and port authorities, to be understand and recognize what the competition determinants between ports, in order for them to develop port plans and port strategies and

improve the performance efficiency, the change which has intervened the port function, the prevailing Port Model, the changing role of the port operators from the government sector to the other types of operation Foreign Direct Investment (FDI) - Build Operate and Transfer (BOT) - Public Private Partnership (PPP), and the growing tendency towards the ports privatization at the worldwide. That requires understanding of the business environment surrounding the port, and creating the Entrepreneurial Culture, that generates port strategies.

The quasi-governmental group in UNCTAD conference says; that there are two strategies to compete in the port that can be pursued to achieve competitive advantages, as follows:

### **Cost Leadership Strategy**

The port could achieve a reduction in operational costs, to become a supplier with the lower cost services to its customers, thus able to compete with other ports, and can be achieved through the following factors:

- Reduction of operational costs.
- Labor costs less.
- Increase the labor productivity to the maximum.
- Optimization Utilization of assets fixed and the potential.
- Facilities and modes with low-cost
- Revenues and low cost fees.
- Facilities and differentiation in the port fees payment.
- Treatment preferential to older clients
- Pricing services flexible

### **Differentiation of Services Strategy**

This strategy depends on the services that are distinct from its other competitors, through provision of the services with high added value, and to achieve differentiation in the certain activities that competitors don't have achieved, unique to the port without the others, this strategy depends on the following factors:

#### **Geographical Location**

The port proximity elements to the main ports and trade routes, the correlation extent between the port and hinterland, volume of the transport network and available communications, and the processing port to receive large size ships.

#### **Facilities**

A specialized berths, terminals and handling equipments appropriate, that depend on high technology in the performance, the major facilities is the most important in the differentiation success on the others

#### **Services**

The services are considered the main function of the port, the port can not achieve its objectives only through the plans, measures and policies were drawn and achieved, to developing the discrimination strategy as a key connecting

customers requirements in integrated service activities, such as cargoes collecting services, ship repair, supply, bunkering, information services for vessels, cargo clearance services and follow-up.

### **Performance**

The ports achieve the differentiation to obtain the lowest rate for the vessel Turnaround, reducing the dwell time, improving the services for customers, and to facilitate and simplify cargoes documentary.

The tow strategies that have the same common target, that is the differentiations obtain, and reduce the service price to customers, the first strategy to obtain this through the low tariffs, and access to appropriate pricing to obtain customer satisfaction, but the second strategy seeks to the differentiation to present the business model unique to the port without the other. (UNCTAD, (1993).

## **EAST PORT SAID CONTAINER TERMINALS**

### **Research Objective and Scope**

The objective of this research is to analyze and to assess East Port Said container terminal existing condition in terms of infrastructure, superstructure and service. And suggestion of development plan emphasizing on the terminal operation strategies and equipment used to meet the terminal future demand.

The basic function of a container terminal is the transfer and storage of containers. East Port Said Terminal operators are accordingly concerned with maximizing operational productivity as containers are handled at the berth and in the yards, and with efficiently utilizing available ground space.

Container handling productivity is directly related to the transfer functions of a container terminal, including the number and movement rate of quayside container cranes, the use of yard equipment, and the productivity of workers employed in waterside, landside, and gate operations.

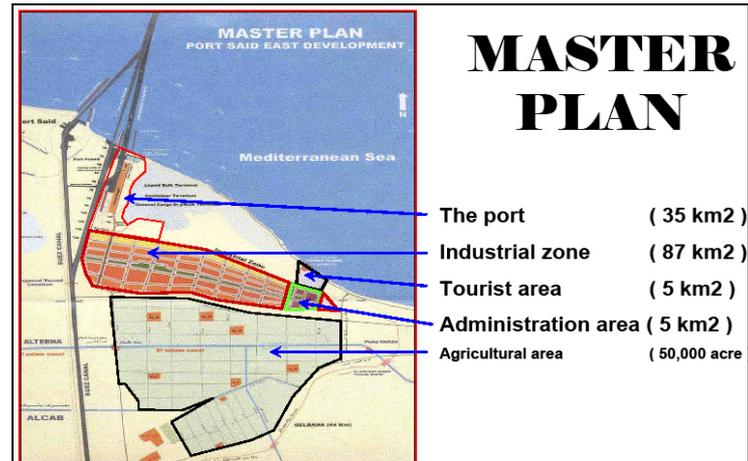
The efficient use of available ground space relates to the number of containers stored in a given area of the terminal.

Improving the utilization of ground space typically reduces the operational accessibility to containers, that is ground space utilization and container accessibility are inversely related. The challenge is therefore to define container accessibility in relation to ground space utilization based on a terminal's operational targets and unique physical characteristics.

The productivity of a container terminal is influenced by a range of factors, only some of which can be controlled by terminal operators. Factors internal to the terminal and under the control of the operator include terminal configuration and layout, capital resources invested to a certain extent, labor productivity. (DCEG .2011)

### **Port Lay Out**

The project consists of a big hub port and transit center and international free zone involves industrial and services projects. Located on the Mediterranean side of the Suez Canal (see Figure 01), through which 30% of the world's container transport and 13% of the world's trade flows.



Source: General authority for Port Said port

Figure 1: Master Plan for Port Said Port

Engineering features, phase one (water and land areas):

<b>Total port area is</b>	<b>35 km<sup>2</sup>.</b>
Currant land area	33.5 km <sup>2</sup> .
Currant water area	1.5 Km <sup>2</sup> .
Terminal length	1.2 Km.
Number of berths	4 berths
Maximum allocated port length	10 Km (western boundary).
Maximum allocated port width	8 Km (southern boundary).
<b>Total Yards Area</b>	<b>642000 m<sup>2</sup>.</b>
Water depth alongside	16.5 m

Productivity features, phase one:

Capacity 6 million Tons / year, maximum Capacity 2.2 million TEUs / year

Max. Vessels size with 350 m. length, 50 m. width and 14 m, tonnage up to 9000 TEUs.

Working Hours Throughout 24 hours

This is one of the most promising port projects in the world, and will have to play a pivotal role in Egypt's economic development. Thanks to the unique location on the entrance of the Suez Canal with zero deviation from the major trade route (see figure 1). And the large amount of available construction space, the project has attracted the attention of all the large shippers and terminal operators. (Port said Port Authority.2011)

The development area involves a total of about 120 km<sup>2</sup>, which is 20 percent more than the surface of the entire Rotterdam port area. Last year Port Said recorded the biggest jump in the world rankings of container ports. Currently it is ranked 38th (up from 67th). The goal is to be part of the top ten container ports. (DCEG.2011)

### **Future Vision and Terminal Development Plan**

Based on foregoing throughput of the terminal and the international market demand, There is no alternative to having the required capacity ahead of demand if the port wishes to Attract new transshipment volumes and maintain the terminal competitive level and that by suggestion for development plan for quay length, number, and performance of quay cranes, yard storage, yard equipment utilization and handling capacity.

### **The Terminal Equipment**

Taking into consideration that the max quay length available after phase II (2400 m) is 2900 m.

And that mean the terminal has limitation for expansion for the quay length more than 2900 m, and also mean that the maximum number of crane the quay can take are 29 cranes, so that the terminal managers have to think about increasing the productivity by using only 29 cranes.

### **Quayside Gantry Cranes**

The gantry cranes remain the one constant element in lift-on-lift-off container operation, the gantry function on the terminal is a pivotal one. The speed with which it load and discharges containers determines the ship handling rate and sets an upper limit to the overall throughput of the terminal. The crane cycle has to run smoothly and as nearly continuously as possible while the ship is being worked

Selecting a suitable gantry crane is not simply a matter of choosing the largest available. Cost considerations, and return on investment, are crucial, and there are also significant civil engineering implications.

Based on that suggest the new twin 40 quayside gantry cranes, the cranes worked very well and the working speed reached 92 TEU/hr. with more operation experience and gradual improved loading technology, the efficiency will be increasing in the future.

World-wide surveys of maritime container terminals reveal that there is considerable variation in the choice of back-up system, the trend is clearly towards further concentration on the straddle carrier and yard gantry crane as two principal means of stacking machines are likely to remain the most common global solution, although there is a noticeable trend to the wider use of pure yard gantry crane applies largely to RTG's. (Port said Port Authority.2011)

### **CONCLUSIONS**

From the assessment of the East Port Said port performance it appears that the port performance is improving with regards to throughput over the study. Moreover, the reasonable occupancy ratio which did not exceed 64.4% in 2008 shows the ability of the port to meet future demands.

On the other hand, the crane productivity need to be enhanced (it reaches a maximum 19 moves/hour, far from any global figure) and the crane utilization rate which can be easily performed by improving productivity per gang to be reduced. It also goes without saying that the pace in improvement in the ship handling process is going faster than the rest of port procedures, which could also be improved.

However, Port Said port has a consistent development of port operations, especially the improvement in container handling operations and the unique port location in the Mediterranean sea with a minimum deviation (Zero) from the main

container routes. In order to minimize ships' turn-around time and to provide a reliable and efficient service for its customers the Port uses the state-of-the-art technology such as Electronic Data Interchange (EDI).

## RECOMMENDATIONS

- Shipping economics, transportation deregulation, and other factors have greatly changed the competitive dynamics for seaports.
- Port need to develop and maintain a competitive advantage in order to be successful,.
- Port can achieve competitive advantage by lowering cost operator or by differentiating their services in a way that creates value for customers.
- Lowering the costs can result from location advantages and/or from highly productive operations.
- Port can add value by offering services for their customers, although many of these services may be easy imitating and thus will not create long term competitive advantage
- Port can become more efficient by growing largely (economies of scale) and attracting larger container ships (increases throughput).
- Port Can achieve competitive advantage by provide differentiate services in a way that is difficult to imitate and provides value to customers (Note) customers include shippers, consignees, freight forwarders, third party logistics firms, and shipping lines
- The services which customers find valuable in added value services such as refrigerated warehousing or packaging, frequent sailings to important destinations, careful freight handing with low loss and damage rates, the ability of shippers/logistics companies to operate their own services if needed, Easy truck and rail access, short travel time from the pilot station to the port.
- Identify the current challenges that impede the East Port Said- Port Said Port to try to overcome them (strengths, weaknesses and threats) to continue to increase the efficiency and effectiveness of the performance of the port.
- Can be reduced through cost advantage of geographical location of the port, or through the highly production of processes

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