International Academic Institute for Science and Technology

International Academic Journal of Business Management
Vol. 1, No. 2, 2014, pp. 80-90.
ISSN 2454-2768

International Academic Journal of Business Management

www.iaiest.com

Minimizing of logistics costs in container terminals: An international competitiveness tools for the Tangier Med Port.

Ouail El Imrani[a] , Aziz Babounia[b]

a Pursuing Ph.D. at the Research Laboratory: Management, Logistics, Governance and Applied Economics, University Abdelmalek Essaadi of Tetouan - Morocco

b Research Professor, Polydisciplinary Faculty of Tetouan, University Abdelmalek Essaâdi, Morocco

Abstract

The problems of the logistic performance of the ports require an increasingly important interest on behalf of the researchers, became a major concern for the countries conscious of the importance the harbor places role in the growth of their economy, in particular, with the image of the current general context marked by the world economic recession, the aggressive competition and the evaluation of complexifications of activity.

Morocco did not remain with the gap face at the accelerated rhythm of the maritime transport on a world level. Within this framework, he agreed during the three last decades of the considerable efforts in the development, the adaptation and the modernization of his harbor infrastructures, like at the legislative level by the installation of the institutional reforms. However, Morocco is confronted with a number of total constraints, which slow down the development of its logistic activities; On the one hand, with export, the costs and times of the passage of the strait are serious handicaps what discourages the Moroccan exporters. In addition, the complexity of the process of importation or taking out of bond weighs down the procedures along the chain. Another aspect to be announced relates to the heaviness of documentary flow what delays the export of the good of the port and generates a lengthening of the deadlines and an increase in the costs. With this is added an institutional vacuum what penalizes the development of effective and efficient supply chains. In front of this situation, the public authorities were harnessed to improve competitiveness of the harbor sector through several measurement shaving for objective to improve quality and the effectiveness of the offered services. These efforts could quickly cultivated their fruits, Morocco at passed from the 94 position in 2007 to the 55 position December 2013, according by the British specialized magazine "Container Management". Within this framework this communication aims to analyze and evaluate the current level of the performance of the container terminals of the Tangier Med port, in order to detect the faults which slow down its development in term

of optimization of the logistic costs of the containers forwarding by the port, in the objective to propose a plan of recommendations and the adapted tracks of reinforcement. Thus, the problems of research can be posed through the following key question: The optimization of the logistic costs of the containers forwarding by the Tangier Med port: Which prospects to support the role of its harbor installations in world maritime logistics?

Keywords: Port performance, Optimization- Minimizing of the logistic costs, , logistics competitiveness, the structure and activities of the Tangier Med port.

Introduction:

Thanks to the good performance in 2014, the Tangier Med port has been ranked at the 46th spot in the world by the British magazine "Container Management". It is thus the fifth Mediterranean Port. He won 9 seats between 2013 and 2014. The site continues to strengthen thanks to the performance of all operators and the strong involvement of the shipowners and the port management.

The operating port terminal in Tangier Med container began in November 2010, after the transfer of the activity of the ancient port city of Tangier Port of Tangier Med. This site helps foster the country's economic development but also to open up new prospects for Moroccan operators and improve their performance.

In this context, our problem for communication to see how public authorities can contribute to the positioning of Morocco in the world by improving the international competitiveness of the port of Tangier Med. It covers the following areas:

- Presentation of The Tangier Med port;
- The role of the TMP in The international market for port and maritime transport;

In this context this communication is part, an attempt to the role of the Tangier Med Port for one answering the following question: How governments can contribute to the positioning of Morocco in the world by improving the international competitiveness of the port of Tanger Med through cost optimization?

Research Objectives:

Being the largest port in the kingdom, Tangier Med is required to serve a large part of Morocco. In 2010, the Tangier Med port complex has consolidated its market position. At its terminals, dealers or subcontractors are required to optimize the performance of their conveyor chains. This is the case for example of container terminals.

The field as a starting point (Environment Research)

Morocco shows continuous progress in international logistics, according to a study by the World Bank in international logistics. Thanks to its strategic location at the gates of Europe (bounded to the north by the Atlantic Ocean, the Strait of Gibraltar and the Mediterranean). Thus, he created a modern port platform able to make him enter the international flow of trade, which mostly transiting through the Mediterranean.

The physical organization of a container terminal

Therefore, traffic containerized Mediterranean ports have increased substantially and a significant evolution. The Tanger-Med port complex is not far from these developments through its ambition to be the most efficient in terms of mastery and development of handling techniques, it has succeeded in the development of these two terminals containers (TC1 and TC2), to become an attractive logistics center, playing on the operation of the production just-in-time.

Yet despite the efforts of port authorities, the performance of other ports sometimes surpass. This is the case of Port Said.

The theoretical framework of research : The physical organization of a container terminal.

Concerning the physical organization, the container terminal is the set of technical installations and port facilities that are used to load, unload or store products (handling) *:

- ***Port operations*** : The equipment used to perform the loading / unloading of ships and transport operations between the dock and the court of the terminal. Its role is to serve as a point of transfer containers between the terminal and the ships.
- ***The storage*** : That mean to store containers when they are unloaded from ships or waiting to be loaded. Its role is to act as a buffer to temporarily absorb the flow of containers to and from ships and other modes of transport.
- ***Land Operations*** : These are the operations of receiving and shipping containers from trains, trucks and barges. Its role is to act as an interface between the terminal and the means of transport mentioned above. In addition, this role of interface implies that it is this area that is responsible for managing the entry and exit of trains and trucks. The equipment used for handling containers in this area depend on the transfer system that was chosen in the terminal storage area. Indeed, maritime container terminals generally use the same type of equipment in both areas.

* La logistique des terminaux portuaires de conteneurs, Julien DUBREUIL, Aout 2008, CIRRELT-2008-38

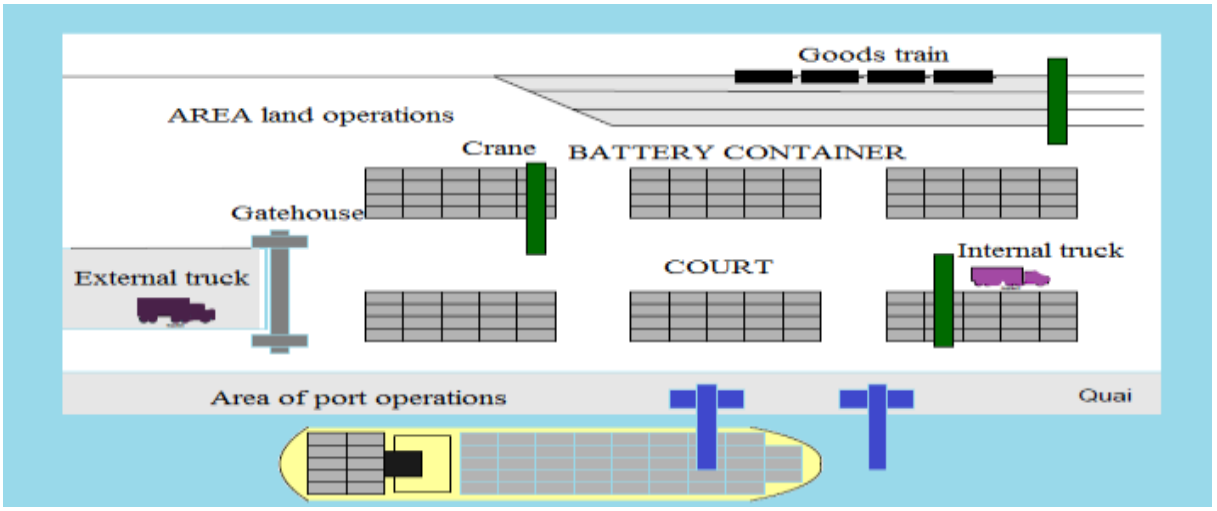


Figure 1 : The physical organization of a container terminal.

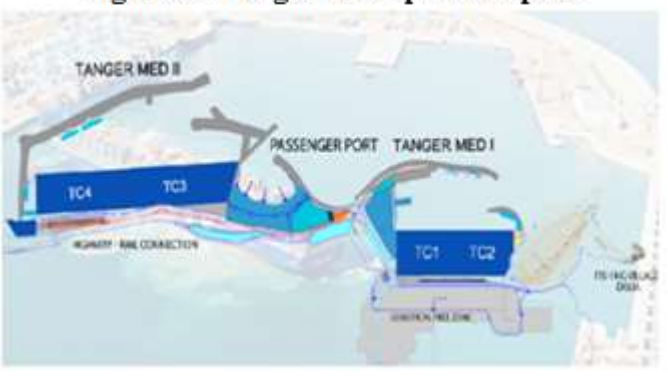
This physical organization main purpose is to facilitate the operations of container terminals, which can be divided into three categories: The first category includes the operations related to the loading and unloading of ships and barges. These operations are performed in the area of port operations. The second category contains all the storage operations and handling of containers in the yard and the operations are performed in the terminal storage area. The last category of transactions for the transfer of containers to the land transport modes. The transactions in this category occur in the earth's area of operations.

Logistics costs in container terminals: a competitiveness and performance Tools of the Tangier Med port

Tangier Med port infrastructures :

The Tangier Med port, tool for growth and creator of value added and employment for Morocco is a catalyst for competitiveness of the national economy and is an attractive port for the automotive industry installed at the Casa-axis Kenitra- Tangier. It is also unifying the different links of the supply chain to converge to a better performance, it is also a key player in the positioning of the Kingdom as a logistics platform in the Mediterranean. The purpose of this article is to contribute to improving logistics performance of Tangier Med port with a view to make it more competitive at international level.

Figure 2 : Tangier Med port complex



On the other hand, Tangier Med has linked Morocco to more effectively Europe's freight transport. Whether by containers or TIR trailers, Morocco's trade with the Old Continent take place in better conditions. A broader offer, but also with more fluidity and a net reduction of delays, all made possible by a direct service from Tangier Med by large container ships.

The port Tangier Med I has two container terminals with a total rated capacity of 3 million TEUs. With 1600 m linear quay, 80 hectares of quay and a depth (level mzh) varying between -12 and -18m, the port receives the largest container doors of the world (400 m LOA, 18,000 TEU) with the implementation of the TC1service in 2007 and that of the second terminal TC2 containers a year later, the port Tangier Med I has forged its place as a container transhipment platform in the west of the Mediterranean. This site continues to consolidate due to the good performance of major shipowners operating at container terminals namely Maersk Line, CMA-CGM / Delmas, Hamburg Sud, Hapag Lloyd., ARKAS, etc.

In addition to its role as a strategic platform container transhipment on East / West axes (Asia / Europe) and North / South (Europe / Africa), the port Tanger Med I plays a key role of connectivity for the promotion and development traffic Import / Export Morocco. Tanger Med I is still an outstanding opportunity to increase the share of rail in supporting the development of Morocco / World trade.

Tangier Med port terminals

1- TC1 : APM Terminals Tangier

The first container terminal (TC1) is operated as part of a 30-year concession granted in 2005 AAPM Terminals Tangier, a subsidiary of APM Terminals Group, one of the world leaders in the management of container terminals, and 'AKWA Group, leader in Morocco in the distribution of fuels, gases and fluids.

Terminal TC1 has 8 gantries Super Post Panamax quay (lifting capacity of 61T), 28 portals wheel, 27 trucks like Kalmar, 37 trucks like ATT, 34 frames 40 'and container storage gantries refrigerated. More Reach Stacker 2 and 5 Empty Handler. Investment in TC1 superstructure and equipment amounted to more than EUR 140 million. Dredging made late September 2012 on the platform of the container terminal TC1 brought the draft to -18m. This achievement allowed the terminal to receive dice 2013 Triple E class vessels Maersk line.

TC1 performs since 2008 on international high standard productivity levels (30+ movements / hour / portal) with non-stop operations in 24h / 365d, enabling TC1 to ensure an equal level of annual processing capacity or above 1.3 Mil TEUs.

2- TC2 : EUROGATE Tangier

The second container terminal (TC2) is operated as part of a 30-year concession granted in 2006 to the consortium EUROGATE TANGER, Contship Italia, Europe's largest port operator and leader and shipping lines MSC and CMA-CGM, respectively 2nd and 3rd global carriers containers. Entered service in July 2008, the second container terminal (TC2) is operated by Eurogate Tanger. The terminal TC2 is multi users and receives the biggest shipowners CMA CGM / Delmas, Hamburg Sud, Hapag Lloyd, akras, Xpress Line Feeders, EMES, DAL, etc.

Besides a draft of up to -18m, allowing the terminal to receive ships generation CMA CGM Marco Polo, the second container terminal TC2 is equipped with 8 Super Post Panamax gantries type of dock (lifting capacity of 61T) 21 gantry wheel trucks 36, 36 frame 40 'as well as storage of refrigerated containers gantry. More Reach Stacker 4, 1 Empty Handler, and a mobile crane. Investment in TC2 superstructure and equipment amounted to more than EUR 140 million.

TC2 performs on international standard levels of productivity ensures operations in 24h / 365d. The nominal capacity of the terminal is about 1.3 Mil TEUs.

2. Table1 : Distribution of traffic by sea Road

Region	Ports	٪
West Africa	773226	38
Asia – Europe	711964	35
Middle east – Nord Europe	76817	4
Tangier Med – West Africa	78266	4
South America – Nord Europe	222874	11
North America	36322	2
USA – Tangier Med – Asia	30278	1
Greece – Turkia – Tangier Med – Nord Europe	21825	0,1
Other serviceces	106869	4,9
Total (EVP)	2058440	100

Merchandise trade activity :

1- Import / Export

The general cargo terminal is dedicated to the processing of import / export traffic mainly due to the activities of industrial firms located in the northern region. In a total area of 5 hectares of which 2 hectares of quayside and 3 hectares of storage, the terminal has a quay length of 500 meters and a draft of water permissible between 10.8 and 13, 5 meters to accommodate Panamax, Handymax and handysize. The general cargo terminal became operational in October 2010. The port authority has outsourced the handling activities in port operator MARSA Maroc. Today, the general cargo terminal is equipped with two quayside unloading crane having successive capacity of 63 tons and 45, in addition to the various means necessary for ground handling of goods, all this equipment can treat two ships simultaneously. Currently, the general cargo terminal can process the following goods: project cargo, grain, sheet metal coils, scrap metal, wood, goods in bags or big bags, heavy lifts, cement, etc. For a total of more than 350,000.

2- Temporary holding area of import containers

The waiting area of import containers was commissioned 22 October 2013, it is temporarily located in the east side of the railway terminal. This is an area that is dedicated to the storage of import containers in need of time to obtain the results of analyzes of samples taken by the various governments. The area also meets the demands of customers who wish to have an additional storage time prior to discharge its duties.

Traffic distribution shows a predominance of export activities of fruits and vegetables and headed citrus and vegetables, with nearly 26% of units with TIR through the port Tangier Med.

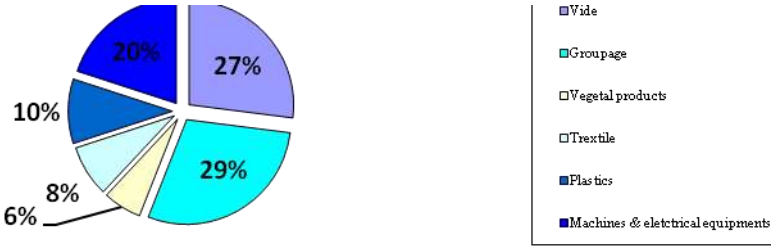


Figure 3: Distribution of TIR traffic at Import.

For imports, the volume of traffic reached 47,153 units TIR. Much of the TIR units through the port Tangier Med for import are returns, following export operations. The TIR export traffic through the port Tangier Med has reached 52,365 units in 2010 TIR. The new import containers of visiting area aims to facilitate the processing of import containers at the port of Tangier Med operations. It is dedicated to import containers in need of time to obtain the results of analyzes of samples taken by the various governments. The new TC import business area is spread over an area of 18,000 m² and has a storage capacity of 600 containers in 3 levels on land and shelter visit containers by Customs 1000 m2 and capacity of 20 containers.

Tangier Med port connectivity :

The Tangier Med port infrastructure have developed a logistics network capable of connecting Morocco not only with Mediterranean countries, but also Africa, Europe, Asia and America. The huge volume of goods to Europe and Asia passing through this port confirms their importance: agricultural products, Cereals, clothing from the Far East and Middle East, electronic equipment are the most important products that are routed through the port Tangier Med. Finally, the Tangier Med Port plays a key role in international trade Because of the maritime connectivity.

Figure 4: ports connected to tangier Med



Source: Tangier Med port Report activity 2015

Tangier Med Port 2

The construction of the Tangier Med 2 began in May 2010 and in accordance with the provisions of the construction contract, signed June 17, 2009 during the official launch of the port Tangier Med 2 work. With a total design capacity of approximately 5.2 million TEUs, the port Tangier Med 2 will bring the total capacity of the container terminal of Tangier Med complex to 8.2 million TEUs, making one Tangier Med the most important transhipment hubs in the Atlantic and Mediterranean. The Tangier Med port 2 includes 4.8 kilometers of dikes, a basin with an area of 160 hectares and 160 hectares of platforms entirely reclaimed from the sea. Dockside reception capacity of 7 mega-holder containers, port forward will total 2.8 km of container quays with drafts between -16 and -18 meters. The Tangier Med port 2 will contain two container terminals. Marsa Morocco is the container terminal at the dealer (TC4). This terminal is characterized by a linear quay 1200 m and an area of medians of 60 hectares. The nominal capacity of the terminal is 2.5 million TEUs. The start of operations is planned for early 2015.

Terrestrials operations

1- Import / Export

The general cargo terminal is dedicated to the processing of import / export traffic mainly due to the activities of industrial firms located in the northern region. In a total area of 5 hectares of which 2 hectares of quayside and 3 hectares of storage, the terminal has a quay length of 500 meters and a draft of water permissible between 10.8 and 13, 5 meters to accommodate Panamax, Handymax and handysize. The general cargo terminal became operational in October 2010. The port authority has outsourced the handling activities in port operator MARSA Maroc. Today, the general cargo terminal is equipped with two quayside unloading crane having successive capacity of 63 tons and 45, in addition to the various means necessary for ground handling of goods, all this equipment can treat two ships simultaneously. Currently, the general cargo terminal can process the following goods: project cargo, grain, sheet metal coils, scrap metal, wood, goods in bags or big bags, heavy lifts, cement, etc. For a total of more than 350,000.

2- Temporary holding area of import containers

The waiting area of import containers was commissioned 22 October 2013, it is temporarily located in the east side of the railway terminal. This is an area that is dedicated to the storage of import containers in need of time to obtain the results of analyzes of samples taken by the various governments. The area also meets the demands of customers who wish to have an additional storage time prior to discharge its duties. Traffic distribution shows a predominance of export activities of fruits and vegetables and headed citrus and vegetables, with nearly 26% of units with TIR through the port Tangier Med.

For imports, the volume of traffic reached 47,153 units TIR. Much of the TIR units through the port Tanger Med for import are returns, following export operations. The TIR export traffic through the port Tanger Med has reached 52,365 units in 2010 TIR. The new import containers of visiting area aims to facilitate the processing of import containers at the port of Tanger Med operations. It is dedicated to import containers in need of time to obtain the results of analyzes of samples taken by the various governments. The new TC import business area is spread over an area of 18,000 m² and has a storage capacity of 600 containers in 3 levels on land and shelter visit containers by Customs 1000 m2 and capacity of 20 containers.

- Holding rates :

	Import/Export		Transhipment
	Board Handling at Dock	Land Handling – Terminal Passage	Board/Terminal/ Board
New tourist vehicle (Category A)*	16 €	7 €	24 €
New vehicle > 1.5T - > 3T (Category B)	20 €	18 €	37 €
New vehicle > 3T - > 5T (Category C)	22 €	22 €	42 €
High & Heavy vehicle gear	16 €	48 €	123 €
Mafi Trailer < 50T	87 €	52 €	135 €
Mafi Trailer > 50T	90 €	55 €	139 €

* Category A: This category includes tourist vehicles of the type : (city car, four-door sedan, single-seater compacts,4-W drive vehicles);

** Category B;

*** Category C: Tourist vehicles are excluded while intermediary vehicles are included, inter alia: (commercial vehicles, minibus, bus, caravan, pickup..)

Source : Rates & Charges Tangier Med Port 2015.

- Harbour Dues on Goods :

	Import	Export	Transhipment
Light vehicles	2.89 €	2.50 €	1.56 €

	Import	Export
1.1 Trailer or Vehicle Combination – full – or any gear not coming under the categories below	190 €	150 €
1.2 Truck, Van or gear up to 12m (Overall) – full -	100 €	80 €
1.3 Vehicle and gear ≥ 18m (Off size)	300 €	220 €
1.4 Agricultural and construction industry gear	190 €	190 €
1.5 Vehicle Combination – empty –	60 €	60 €
1.6 Empty trailer, pallet or tractor	30 €	30 €
1.7 Truck and gear up to 12m (Overall) – empty -	30 €	30 €

High & Heavy New	Transhipment
High & Heavy Gear up to 10 T	9.36 €
High & Heavy Gear > 10 T	15.60 €
Towed gear up to 50 T	12.48 €
Towed gear > 50 T	15.60 €

Source : Rates & Charges Tangier Med Port 2015.

Discussion of Results

The development of transport and improving logistics performance are key issues for countries that wish to become more competitive in the international geo-economic scene. Good infrastructure, able to fluidities of the exchanges represent additional pledges for success international trade while providing local solutions to open up certain marginalized areas and to involve them in the national economy, is the case of Port Tangier Med in Morocco.

The study of the management of Tangier Med port container terminals allowed us to analyze the operation of handling subsystems and the organization of shore operations. Barriers to optimizing the commercial service were identified. These have an impact on the role of Tanger Med in global maritime logistics firstly affect the quality of services to shippers, traders, ship operators and ship owners, on the other hand the overall performance of handling companies .

References

Aziz BABOUNIA, & Ouail EL IMRANI,(2016), Test benefits evaluation of highways of morocco on the user, the community and the state, International Journal of Development Research, Impact Factor: 4.25, Vol. 06, Issue, 07, pp.8593-8598, July, 2016

Aziz BABOUNIA, & Ouail EL IMRANI, (2016), The logistics of port container terminals: What prospects for fostering the role of Tangier Med port in the global maritime logistics?. Revue De Gestion Et D'ÉConomie, 4(1), 30-49, September 2015.

Christine Bertrama,, Thomas Dworak , Stefan Görlitz,Eduard Interwies , Katrin Rehdanz (2013): « Cost-benefit analysis in the context of the EU Marine Strategy Framework Directive: The case of Germany ».

Frémont ANTOINE (2010) : «Les ports, leviers de développement ? : Opportunités sur la rive sud de la Méditerranée».
Le Havre Université et la région Haute Normandie (2013) : « LE PASSAGE PORTUAIRE : Approches interdisciplinaires des flux de marchandises transitant par le port ».
Marie-Claude Frigon, Groupe de services conseils en commerce de détail, Québec (2009) : « indicateurs de performance »
Moise Donald Dailly (2013) : « Logistique et transport international de marchandises - Guide pratique » 1ère édition , l'Harmmatan.
Nils AXEL Braathen , OCDE (2011) : « Impacts environnementaux de la navigation : le rôle des ports ».
Ouail EL IMRANI & Aziz BABOUNIA., "Tangier Med Port: What role for the Moroccan Economy and the International Trade?" International Journal of Research in Management, Economics and Commerce, ISSN 2250-057X, Impact Factor: 6.384, Volume 06 Issue 07, July 2016, Page 73-81
Ouail EL IMRANI & Aziz BABOUNIA "Optimizing logistics costs: the case of grain through the port of Tangier Med ", The International Journal of Multi-disciplinary Sciences - ISSN: 2421-9606 (Online) (2016), Impact Factor : 0.7 (p94-p114).
Oumarou MEFIRO (2012): « Transports, espaces et logistique, l'Harmattan.
Oscar Ndjao Nguémassa(2013) : « Amélioration de la performance de la logistique portuaire des ports du Gabon : cas du port d'Owendo ».
Tangier Med Port activity report 2015.
Tanger Med port Autority, annual report (2010 and 2014).
United Nations Conference on Trade and Development 2014 Review of Maritime Transport. World Development Indicators report 2015:Trade facilitation: http://data.worldbank.org/data-catalog/world-development-indicators