Container terminals in the Mediterranean region

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Abstract

Globalisation of the world economy is the driving force behind the ever-growing flow of containers. The rapid growth of container traffic requires, amongst other things, additional terminal capacity. In this paper the issue is dealt with from a terminal operator’s (i.e. PSA Europe) point of view.

Since the late 80s/early 90s stevedoring companies have started to invest in other terminals in order to establish a global network. Looking for new investment opportunities various terminal operators focus on the Mediterranean region. Here, a distinction between two types of ports can be made; on the one hand existing ports (e.g. Barcelona, Genoa) that serve a particular hinterland, on the other hand major sea-sea transhipment hubs (e.g. Algeciras, Gioia Tauro) that have emerged lately. The latter category needs the special attention of an independent stevedoring company because shipping lines can easily move their sea-sea transshipment to other ports.

After analysing the individual ports in detail, a score card has been used for project appraisal. By studying literature and consulting industry experts a limited set of Key Performance Indicators (KPI) was identified. Subsequently, a qualitative score for each KPI was assigned to the port under consideration. In this way the most promising business prospects become visible at a glance. Different investment strategies can be pursued: brownfield projects i.e. mergers and takeovers, and greenfield projects i.e. building new terminals. However, before the actual investment decision is taken, further research should be carried out.

Keywords: container transhipment, performance indicators, project appraisal.
1 Introduction

Over the last decades, globalisation of the world economy has become a striking phenomenon. In order to meet the ever growing demand for maritime transport, shipping lines invest heavily in capacity. The current fleet of container ships with a total capacity of 7 million TEU has doubled since 1997. Ship size is also increasing. Since the mid-1990's the maximum capacity of containerships has shown rapid growth and new buildings keep getting bigger and bigger. As of January 2004 already 30 containerships of above 7500 TEU are in service and another 126 ships are on order (http://www.brs-paris.com/).

Obviously, the main liner companies will continue to invest in larger tonnage and 9,000 to 10,000 TEU vessels will be deployed on the East/West arterial routes. The design and construction of vessels with capacities of up to about 10,000 TEU is well within reach since Seaspan ordered 9600 TEU vessels for China Shipping Container Line (CSCL) due for delivery on May 31, 2007. This vessel resembles the 8,486 TEU CSCL ASIA, at the moment the biggest container ship: Length Over All 334 meter, beam 42.8 meter and draft 14.5 meter. The air draft of such a vessel is 61.5 meter! In order to obtain additional slots the beam of the vessel is extended to 45.6 meter (18 rows of containers).

Up to around 10,000 TEU vessels will reflect current design parameters and will be powered by a single main engine, with a power output of 90,000 BHP plus, generating a 25-knot service speed. Anything beyond that size will have to be twin-engined if that speed is to be maintained. For these vessels the Suez Canal imposes the next boundary. The V-shaped bottom of the canal allows common U-hulled containerships of (maximum) 400 meters length, beam of 50 meters (= 20 containers) and draft of 17 meter. Such a Suez-max vessel can carry up to 12,000 TEUs.

Increasing ship size will have a profound impact on calling patterns i.e. the number of ports of call will be minimized. Due to physical constraints such as harbour waters, berths and approach channels as well as economic reasons pure hub and spoke networks will emerge. Suez-max vessels (and larger) will be deployed between the hubs and feeders operate along the ‘spokes’ and serve smaller ports with a domestic market.

With respect to hub ports two different types can be identified: on the one hand the traditional hub port that has its own (vast) hinterland but also provides (substantial volumes of) sea-sea transhipment, on the other hand new emerging hub ports focusing on sea-sea transhipment.

The above mentioned developments in container shipping and transhipment have their influence on terminal operations and stevedoring companies. Recent trends in the stevedoring industry include horizontal and vertical expansion through acquisitions of global terminal operators (e.g. Hutchinson Port Holdings (HPH), Port of Singapore Authority (PSA), P&O Ports) or mergers (e.g. Eurogate). If container shipping lines invest in terminal operations (e.g. APM Terminals) or joint ventures with stevedore companies (e.g. Euromax terminal in Rotterdam (P&O Nedlloyd, HPH), Altenwerder terminal in Hamburg (Hapag Lloyd, HHLA)) vertical integration of the transport chain is manifest [1].
2 Mediterranean region

One of the regions terminal operators focus on is the Mediterranean. Ports in the Mediterranean region benefit from developments in container trade, increasing ship size and new calling patterns. Over the last fifteen years a very remarkable shift in container transhipment occurred: since 1990 the market share of South Europe in container transhipment increased from 34.2 % to 45.3 % in 2002 [2]. The most promising ports are examined in more detail. The general information is mostly obtained from industry websites, port handbooks et cetera.

2.1 Western Mediterranean

Spain

The most important country in the Western Mediterranean region is Spain. Here, three container ports attract attention, namely Barcelona, Valencia and Algeciras. The port of Barcelona is carrying out plans for huge expansions. The draught alongside these new terminals will be 22m and will allow the port of Barcelona to receive even the largest container vessels in the future. Since these expansions are under construction, the port authority is actively seeking for new private terminal operators. Existing port operators, including Terminal Contenedores de Barcelona are expected to move to the new expansion area in time. In addition, the Port of Barcelona expects that opportunities for new container terminal operators to enter the Barcelona market will be created, generating more competition within the port, potentially resulting in even better services to customers.

The port of Barcelona is seeking to extend its hinterland further north, and into France, thereby distinguishing itself more from Valencia, which tends to be stronger in the south and centre of Spain. The port of Valencia is not planning to develop new container terminals but is trying to link the cargo handling activities to those of the port of Sagunto. This conglomerate of ports will certainly be able to compete with other neighbouring ports in the West Mediterranean area.

The port of Algeciras is one of the leading deep-water ports in the Mediterranean. By handling 2.23 million TEU in 2002, the port maintained its container hub status. Container handling activities at Algeciras are partly operated by the port authority, whilst the other part is operated by APM Terminals for pure sea-sea transhipment activities for Maersk Sealand. In contrast with most other Spanish ports, hinterland connections of the port of Algeciras are rather poor. At the moment, Algeciras is constructing the Outer Isla Verde, which is the biggest port development in its history and the first new facilities with an additional capacity of 700,000 TEU, should be operational by 2006. In addition with other port developments, the port authority tries to market the port to other shipping lines seeking a hub in the Western Mediterranean.

France

In the port of Marseille/Fos, shipping line CMA CGM in cooperation with P&O Ports operate the port. There is no real potential for foreign private investors in
the sense that they can add an extra value. The only possibility could be an acquisition, but it is very doubtful whether the French government would accept that. The port has sufficient nautical access to receive and handle the largest container vessels. However, the port has no real hub status. Hinterland connections are quite good with a direct link to the central France regions.

**Algeria/Morocco**

Neutral investment conditions combined with a neutral market entrance potential and a very positive nautical access results in a quite attractive situation for investments in some ports in these countries. The port of Tanger Atlantique and Algiers are supposedly growing fast in container transhipment in the years to come. Forecasts, based on OSC reports, show an under-capacity in the near future for these ports. However, these ports have drawbacks too. The hinterland is very small and economical and political stability of both countries is uncertain. Potentially, a (mainly) sea-sea transhipment hub is feasible.

**2.2 Central Mediterranean**

**Italy**

The lion’s share of this part of Europe consists of Italian ports. According to maritime publications, the conditions in most of these ports is good but the possibilities for foreign private investors are only limited due to the position of established terminal operator companies. Contship Italia, part of the Eurokai group, is the main terminal operator in the Italian container ports.

Over the past five years, the port of Genoa has strengthened its position as a gateway for transatlantic trades with North America. Average growth amounted 21.8% between 1997 and 2002. Other significant growths in services are those to North and West Africa and to the Middle East. Traffic to Asia decreased slightly last year, although it remains the second biggest trade route out of Genoa after the transatlantic trade. The port authority confidently expects a return to growth in its Asian business this year, especially as a result of increased China exports to Italy. A significant expansion programme being undertaken by the port authority is nearing completion. The quay will increase with 350m and 50,000m² will be added to the area with a surrounding water depth of 16m.

Two other very important ports are Taranto and Gioia Tauro. These ports mainly focus on sea-sea transhipment, which is risky business for a terminal operator if there is no link with a shipping line and the hinterland. Both ports are busy to promote hinterland connections, mainly by train.

The port of Gioia Tauro is well connected to the Italian rail network, which allows distributing containers to the major Italian and European destinations. A dedicated rail terminal with a capacity of more than 400,000 TEU/year operates since 1999. It handles over 20 national block-trains per day. Every Italian destination can be reached within 24 hours by train from the Medcenter Container Terminal. Trains do not only serve national destinations, in 2000 the port was running some 34 international block trains weekly. Gioia Tauro is the origin/destination of a Trans European Rail Freight Freeway (TERFF) with
international destinations such as Basle, Mannheim and Munich within a one day reach. Contship Italia established MarCo, a joint venture with German railway operator, DB, to operate a transalpine rail freight service through Gioia Tauro. The operation is designed to attract Far East-Central Europe trade, currently routed via North European ports. Transhipment via Gioia Tauro could offer reduced transit times and lower transport costs. Gioia Tauro also has an excellent link to the Italian road network. Medcenter Container Terminal has dedicated access to the Italian motorway system ensuring efficient road distribution throughout the Italian market. About 13 shipping lines are regular customers to Gioia Tauro to feeder containers from the port to West Med, East Med, Adriatic, Aegean and Black Sea ports, with main destinations served many times a week. Besides sea-sea transhipment, the management of the port and terminal is trying to diversify in industrial development and free trade zones.

The port of Taranto is also becoming attractive for pure sea-sea transhipment as well as for import/export traffic. Also the connection with the rail network towards Milan is a very important driver to attract cargo. It remains to be seen whether containers can be transported profitably from the deep south to the northern regions.

However, it is very doubtful whether these ports could be attractive for private investors. Gioia Tauro is mainly operated by the earlier mentioned Contship Italia and APM Terminals and Taranto by Evergreen Marine Corporation. So business opportunities for other investors are limited. Other ports in the Central Mediterranean area are not that attractive for global terminal operators due to the small scale of their operations and the presence of other terminal operators. Moreover no further expansions in one of these ports have been planned in the foreseeable future.

The port of Trieste, which has been struggling to increase container transhipment in recent years, has just received a significant boost because Lloyd Triestino is to resume direct calls into its home port with the launch of a direct service to and from China, operated in cooperation with CMA CGM. By using Trieste rather than one of the major North European ports, Lloyd Triestino says many Central European importers will see savings of between three to five days in overall door-to-door transit time. Moreover, work is underway to double the size of the terminal site and equip a further 1,000m of quay (total length of the quay will then amount up to 2,000m.) with 17.7m depth alongside. It is said that Luka Koper, the Slovenian port operator that currently holds a stake of 49% in the Trieste International Container Terminal (TICT) is negotiating the sale of a large stake in the TICT. Albeit no detailed or concrete reactions are available yet, TICT is undergoing a ‘management-change’.

**Tunisia**

Notwithstanding the market potential in this country, ports are not important for container traffic. Therefore, container terminal operators might not (yet) be interested. There are no plans to expand one of these ports in the near future. The political and economical stability is doubtful, too.
Malta
At Marsaxlokk in Malta, terminal one has 1,000m of berth equipped with seven post-Panamax gantry container cranes and 14,5m depth alongside. In 2002, two post-Panamax cranes were upgraded to super post-Panamax size giving them an outreach of 50,5m. Terminal two has 1,258m of berth, equipped with eight super post-Panamax container gantry cranes and an alongside depth of 15,5m. An increase in capacity at the existing terminals will be achieved by a 16 ha expansion and another six super post-Panamax cranes. The planned construction of a third terminal with a 450,000 TEU/year capacity is still pending on a decision on terminal privatisation. The privatisation of Malta Freeport Container Terminal has already started; CMA CGM, the port’s largest customer, is due to be awarded a 30-year concession to manage the port. It will run the facility as a common user terminal.

Malta Freeport currently handles about 1.24 million TEU per year, of which CMA CGM accounts for some 70%. Today, other users of the port are CMA CGM’s partner lines Norasia and China Shipping Container Line. APL, P&O Nedlloyd and Contship also call at Marsaxlokk. It remains to be seen whether the other carriers will increase the number of calls per week to the Malta port.

To widen its business horizons beyond its shores and gain a foothold on the European mainland, Malta Freeport has acquired 40% of the shares in Brindisi Terminal Italia S.p.A. This terminal is mainly targeting origin and destination cargo but because of its strategic location, it will be marketed as a homeport serving primarily as a gateway to the Southern Italian region.

2.3 East Mediterranean

The most important and opportunistic ports in this region are located in Greece, Turkey, Cyprus and Egypt.

Greece
The most important container ports in this country are Thessaloniki and Piraeus. Thessaloniki is a very attractive port for supplying central and eastern Europe. The port authorities intend to become the focal point of this trade. Market entry as well as investment conditions could be assessed as neutral for both ports. The Greek government is rather open to new (private) parties investing in ports. MSC is already involved in the port of Piraeus with transhipment activities. Piraeus is also planning huge expansions for the near future and will therefore attract further traffic. This is a good business opportunity for private terminal operators, however, sea-sea transhipment should be combined with import/export trade.

Turkey
The Turkish market is booming. Huge trade flows are going in and out of Turkey. This would imply an enormous attractiveness for foreign private container terminal operators because this also implies increasing container traffic. However, the investment conditions and the market entrance possibilities are rather poor. There is still uncertainty about the reliability of some governmental organisations and port authorities. Turkey is very open to foreign
initiative and intends to become a world scale market. They applied for EU-membership but there are still some doubtful issues that need careful treatment. If these uncertainties are removed, the Turkish ports could become very important in container shipping lines’ sailing networks.

**Cyprus**

According to MSC, this country and especially the city of Limassol, homeport of many container vessels, seems to have a lot of potential in terms of openness for foreign parties. The Cypriotes possess the entrepreneurial spirit to update their container port and promote it to the world shipping lines. There is only one obstacle: space is very limited. So the attractiveness towards foreign private terminal operators is not very high.

**Egypt**

The most important container port in Egypt, is the port of Port Said. This port, partly operated by HPH and APM Terminals might be open for third parties, however, this is not sure yet. The Suez Canal Container Terminal (SCCT) recently opened for operation. Sea-sea transhipments will be the core business at this terminal. Nautical access is excellent whereas hinterland connections are rather poor. It remains to be seen whether the terminal will become as successful as expected. Notwithstanding the attractive market potential and nautical access, flexibility is limited and the Egyptian authorities are not really open for further private initiatives.

### 3 Business opportunities

A logical step in the process of taking an investment decision is narrowing down the number of potential projects. Therefore, a filter method needs to be applied to reduce the long list of ports to a short list.

In order to identify the business opportunities in the Mediterranean region for independent terminal operators, a wide range of performance indicators was identified. This set of indicators was presented to professionals from PSA (who played, of course, the most important role) as well as to external companies. The latter category was approached by phone, e-mail or face to face contact. They were asked to indicate the most important ones. This resulted in four Key Performance Indicators (KPIs), ranked according to their importance [3]:

1. **Market (potential/entry)**

   Without any potential market, no company is eager to invest in a terminal project. Hence, the anticipated volume via the terminal and the type of throughput; sea-sea transhipment or pure import/export traffic is of pivotal importance. However, if the capacity of the terminals is already sufficient to handle the forecasted demand, only brownfield investments i.e. mergers or takeovers are under consideration. In case of under capacity greenfield investments i.e. building new terminals could be the solution. If a port proves to be an interesting investment opportunity, the criterion of market entry becomes manifest. Sometimes barriers exist due to current (monopolistic) competitors or
inflexibility of the port authority. Obviously, objective information on this latter aspect is difficult to derive.

2. Hinterland connections
Connections to the hinterland for all transport modes (road, rail, inland waterways, pipelines) rank amongst the most important aspects for investing in terminals. Well established ports in Europe are usually connected to extensive rail and road networks, developing ports in the Mediterranean region only to a lesser extent. With respect to rail, not only infrastructure is taken into account but also organisational affairs.

3. Nautical access
The depth of access channels and alongside the quays is an important factor especially if large vessels call at the port. Regarding the future, deep-sea handling ports will be required to maintain a draft of about at least 15 meters to be able to accommodate vessels up to 12,500 TEU. Even if dredging is a possibility it requires huge financial efforts, money not always available in tight government budgets.

4. Investment conditions
Finally, investment conditions need to be considered. Financing a terminal project requires vast amounts of money, so a terminal operator needs to have a clear view on the potential risks and social and political stability. Regarding the type of port administration terminal operators want to know the port authority’s propensity towards private investors. Also, the presence of a skilled and motivated workforce and educational institutes is important. In addition, risks such as the probability of natural disasters and terrorist attacks need to be taken into account.

The results are summarised in a matrix i.e. score card in which the ports are listed horizontally and the Key Performance Indicators vertically. Per indicator a qualitative score is assigned to each port. This is based on both the actual and anticipated situation. Thus, the total represents the attractiveness of the port. In the table the most attractive ports to invest in become visible at a glance.

4 Conclusions

With respect to container transhipment the Mediterranean area is a dynamic region. A few hubs in ports as Algeciras, Gioia Tauro and Malta Freeport have already emerged and many new terminals are anticipated. However, terminal operations mainly consist of sea-sea transhipment which is risky business for independent terminal operators because container shipping lines can easily remove these ports of call from their sailing list. Therefore, some ports are improving their hinterland connections and offer value adding services. Particularly these ports are of interest to independent stevedoring companies. This study identifies various ports in the Mediterranean region as potentially attractive business opportunities. However, the type of investment i.e. greenfield or brownfield projects, needs to be considered. In addition, more research is needed before the actual investment decision van be taken.
## Table 1.

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