SERVICE QUALITY IMPROVEMENT AT THE CONTAINER TERMINAL OF THE PORT OF CASABLANCA
Marsa Maroc - Background

Main issues causing the port of Casablanca congestion

Short and long term remedial actions
  - Strategic short and long term remedial actions
  - Immediate short term remedial actions

Proposal for immediate actions Marsa Maroc
  - Improvement of operating performance
  - Road map to reduce the container dwell time

Results
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Marsa Maroc at a Glance - The leading Moroccan port operator

Multi-users Terminals treating 36 MT of a wide range of businesses in 4 areas offering a global capacity of:

- 20 MT in solid bulk;
- 20 MT liquid Bulk;
- 10 MT General cargo;
- 200,000 new cars;
- 1,600,000 TEUs (gateway);
- 2,300,000 TEUs (transshipment): under construction
A various kinds of traffic

- Container: 800,000 TEU
- Dry Bulk: 9 MT
- General cargo: 4 MT
- Ro-Ro: 100,000 vehicles
- Liquid Bulk: 13.6 MT

Overview of Marsa Maroc
Marsa Maroc got a foothold in the port of Tangier Med

The Transshipment Container Terminal 4:

• A capacity of 2,300,000 TEUs;

• 1,200 m quay with a depth of 16 m;

• 54 hectares of land;

• Scheduled to start operations in the 2nd half of 2016.

...an initial investment of 200 million Euros
Marsa Maroc obtained a new concession in Casablanca

The Container Terminal 3:

- A capacity of 600,000 TEUs;
- 600 m quay length with a depth of 14 m;
- 30 hectares of land;
- Scheduled to start operations in the 2nd half of 2015.

...an initial investment of 200 million Euros
Casablanca container terminal layout:

- Marsa Maroc Terminal; 12 m of drought 65% of MS; 5 vessels position. 600 m of quay. 60 Ha of area.
- New concession for Marsa Maroc; 12 m of drought. Kick of in 2015; 5 vessels position. 600 m of quay. 30 Ha of area.

- Global capacity of 1 300 000 TEUs (Gateway);
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Results
## Context factors

<table>
<thead>
<tr>
<th>Traffic growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>− Container traffic expansion growth of 20% in 2007 compared to 9% in 2006.</td>
</tr>
<tr>
<td>− Increase in average cargo per ship by 30% between 2006 and 2007.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Storage space and equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>− Lack of storage facilities to handle the increased demand</td>
</tr>
<tr>
<td>− Insufficient amount of required equipment (straddle-carriers, trailers, etc…).</td>
</tr>
</tbody>
</table>

## Organizational factors

<table>
<thead>
<tr>
<th>Inadequate communication network</th>
</tr>
</thead>
<tbody>
<tr>
<td>− Complex communication network requiring a large number of intervening players (importers/exporters, maritime agents, bankers, administrators, customs officers, etc.).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Administrative control inside the terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>− Delay caused by the complex network of customs, office control and other organizations intervening in the port.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capacity / performance Of Marsa Maroc</th>
</tr>
</thead>
<tbody>
<tr>
<td>− Reduction of the capacity and operations’ performance of Marsa Maroc.</td>
</tr>
</tbody>
</table>
1. Container Dwell Time

- Imported container dwell time averaged about 13.54 days in 2007;
- Average time for truck delivery was about 100 minutes instead of 30 minutes in normal situation;
- Average stacking height was 2.6, keeping in mind that the terminal capacity was 2.8;
2. Low quay productivity:

- Vessels handling productivity was very low:
  14 moves/hr instead of 27 moves/hr in normal situations

**PRODUCTIVITY (moves/hr)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>20</td>
</tr>
<tr>
<td>2006</td>
<td>16</td>
</tr>
<tr>
<td>2007</td>
<td>14</td>
</tr>
</tbody>
</table>
3. Vessel waiting times in harbor

Vessel waiting times in harbor was extremely high, reaching a high of 57 hours per ship;
Marsa Maroc - Background

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Results
Two Horizons of Action

Horizon 1: 2008
- Short term action for storage capacity extension
- Improving Quality Of Service
- Road map
- Action taken by Marsa Maroc to decrease dwell time
- Immediate actions to improve the operating performance (quay, storage facilities and delivery)

Horizon 2: After 2009
- Somaport Terminal
- Launching the construction of the 3rd container terminal
- Integrate long term action to improve the operating performance of Marsa Maroc
- HR planning, redeployment and training to enhance workforce motivation and productivity
- Reorganization of the port transit process (involving all stakeholders)
- Marsa Maroc - Background
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- Results
## 2008 OBJECTIVES

### Main actions of 2008

1. Improving the Terminal operation performance

2. Setting up of the road map to decrease the container dwell time.

### Stakeholders

- Importers / exporters;
- Banks; port authority
- Shipping agents;
- Freight – Forwarders.

### Main Indicators (KPI’s)

#### Port Performance:

- **Inflow**
  - Ships waiting time
  - Quay productivity
  - Storage level

- **Outflow**
  - Delivery time
  - Number of container delivered per day

#### Decrease of the container dwell time at the port of Casablanca
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Main performance indicators

- Vessels waiting in harbor
- Quay productivity (number of containers moved per hour)
- Storage level
- Stacking height
- Truck waiting time
- Number of containers delivered per day
Improving the quay productivity

Storage optimization

Standardization of container truck loading

Terminal organization layout (flow)
### Performance indicator

- **Waiting time in harbor**
  - # days

### 2008 objectives

<table>
<thead>
<tr>
<th>Year</th>
<th>Waiting time in harbor</th>
<th>Quay and yard productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>07</td>
<td>2 days</td>
<td>14</td>
</tr>
<tr>
<td>08</td>
<td>1 day</td>
<td>18</td>
</tr>
<tr>
<td>09</td>
<td>Less than 4h</td>
<td>24</td>
</tr>
</tbody>
</table>

- **-50%** increase
- **+28%** increase

### Main realized actions

- **Planning of ship arrivals**
  - Preparation of the berthing and the vessel's handling process along with the shipping agent;
  - Systematic evaluation of ship call operations;
  - Required submittal of the export container sequence 24 hr before the ship's berthing;
  - Preparation of export containers before completion of import operations.

- **Upgrading of equipment**
  - Reinforcement of equipment maintenance (gantry cranes, etc);
  - Conformance to the maintenance schedule;
  - Purchase of new equipment.

- **Human Resources**
  - HR motivation program (bonus and incentives);
  - Continuous staff international training program (crane and straddle carrier drivers).
**Storage Optimization**

<table>
<thead>
<tr>
<th>Performance indicator</th>
<th>2008 objectives</th>
<th>Main realized actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage level</td>
<td>2008</td>
<td>• Acquisition of new equipment:</td>
</tr>
<tr>
<td>stacking height</td>
<td>objectives</td>
<td>– 9 new straddle carriers</td>
</tr>
<tr>
<td></td>
<td>07 08 -60%</td>
<td>– 8 fork-lift elevators</td>
</tr>
<tr>
<td></td>
<td>1,7 1,5</td>
<td>• Extension of the container import storage area:</td>
</tr>
<tr>
<td></td>
<td>07 08 09</td>
<td>- Development of an additional storage area of 6 Ha (14,8 acres);</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Development of two additional delivery areas;</td>
</tr>
</tbody>
</table>
|                      |                 | - Development of the customs’ control area isolated from the operation yards.
- Tripling the truck loading areas;
- Possibility of scheduling delivery by prior appointment;
- Increase in handling equipment (straddle carriers, etc);
- HR performance reinforcement (national and international training, redeployment, motivation, etc);
- Streamlining the billing process.
Re-engineering of the terminal

Main realized actions

- Rationalization of flows (import, export);
- Marsa Maroc "unique actor in the terminal;
- Customs control area outside the terminal.
# Glossary of Performance Indicators of the Containers Terminals

<table>
<thead>
<tr>
<th>Ind.</th>
<th>Description</th>
<th>Formulate</th>
<th>Measure unit</th>
<th>Responsible</th>
<th>2008 situation</th>
<th>2009 objective</th>
<th>Week situation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ships waiting time</td>
<td>$\sum$ (date and hour of berth - date and hour of harbor entry) / $\sum$ stop over</td>
<td>hour</td>
<td>M. CHAHIR</td>
<td>1,25d=30 h</td>
<td>10 h</td>
<td>4 h</td>
</tr>
<tr>
<td>2</td>
<td>Quay movement</td>
<td>$\sum$ number of import boxes (full and empty) + $\sum$ number of export boxes (full and empty)</td>
<td>Movement /days</td>
<td>M. JEBBOURI</td>
<td>1350 Movement/day s</td>
<td>1600 Movement/day s</td>
<td>1176 Movement/day s</td>
</tr>
<tr>
<td>3</td>
<td>Charging trucks average time</td>
<td>$\sum$ (hour of the TC leaving ticket - hour of the TC handling ticket) / $\sum$ TCs left</td>
<td>Minutes</td>
<td>M. JEBBOURI</td>
<td>62 minutes</td>
<td>30 minutes</td>
<td>32 minutes</td>
</tr>
<tr>
<td>4</td>
<td>Containers’ leaving follow up</td>
<td>$\sum$ delivered boxes per day</td>
<td>movement/day s</td>
<td>M. JEBBOURI</td>
<td>803 containers</td>
<td>800 containers</td>
<td>550 containers</td>
</tr>
</tbody>
</table>

(* Gross Time : $\sum$ (number of quay crane x 8h)) - $\sum$ (berth delay time + finished ship’ time)
(** Net Time : Gross Time- deductible stoppage:
  - Haul out
  - Opening/closing of hatch covers
  - Out size manipulation
  - Shifting

Excellent > to 120% of the objective
Good 100 to 120% of the objective
Average 80 to 100 % of the objective
Bad  < to 80 % of the objective
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**Immediate actions to reduce the dwell time**

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</table>
| • Informing and increasing customer awareness  
  – Establishment of a website for container tracking. |
| • Reorganization of the terminal  
  – New control areas  
  – New truck loading areas  
  – Enclosing the terminal (security, safety and performance) |
| • Incentive pricing:  
  – Encouraging customers using the port for transit (increase the free period from 5 to 8 days).  
  – Penalizing customers using the port as a storage area for their goods (higher tariffs and removal of the free charge period). |

**Further actions**

<table>
<thead>
<tr>
<th>All stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Improving the port layout (flow separation, control area, etc.)</td>
</tr>
<tr>
<td>• Streamlining the process of control (anticipating, outsourcing, etc)</td>
</tr>
<tr>
<td>• Optimization and use of IT for information flow.</td>
</tr>
</tbody>
</table>

**Further Stakeholders**

- Accelerate the development of new infrastructure and superstructure in the port area of Casablanca;
- Reorganizing the operating mode of the port area;
- Simplification and streamlining of the controlling procedures of the port transit by the stakeholders within the supply chain.
- Optimization of communication network between different stakeholders (port operators, supervisors, importers/exporters, customers)
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Results
A. Improving the quay productivity by 100%

B. Reduction of ship waiting time to an average of 3h

RESULTS OF IMPROVING QUALITY OF SERVICE

Productivity Moves/Hour

Containership Waiting Time

- Productivity Moves/Hour chart showing an increase from 14 in 2007 to 28 in 2013.
- Containership Waiting Time chart showing a decrease from 57 in 2007 to 3 in 2013.
C. Reduction of the truck delivery time to an average of 30 min.

D. Reduction of the full container storage period to 10 days (dwell time).
Certification ISO 9001- v2008 of Container Terminal in Casablanca port

Certified ISO 9001- v2008 in 2013
THANK YOU

QUESTIONS ?