Assessing Port Performance
Port Performance Indicators

by

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Location

Ashdod port is located in ASHDOD, about 40 km south of Tel-Aviv.

This strategic central location was determined as a result of proximity to major traffic arteries and the ability to cut short inland transportation time.
• **ASHDOD PORT (2011)**
• TOTAL TRAFFIC - **18,787,000 TONS**
• TOTAL CONTAINERS – **1,167,727 TEU**  **776,435 BOX’S,**
### Port Equipment

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-T-S Cont. cranes</td>
<td>14</td>
</tr>
<tr>
<td>R-M-G</td>
<td>10</td>
</tr>
<tr>
<td>R-T-G</td>
<td>24</td>
</tr>
<tr>
<td>S-T-S G/C cranes</td>
<td>28</td>
</tr>
<tr>
<td>Forklifts</td>
<td>130</td>
</tr>
<tr>
<td>Yard trailers</td>
<td>83</td>
</tr>
<tr>
<td>bulldozers</td>
<td>20</td>
</tr>
</tbody>
</table>

**1300 EMPLOYEES**

### 2001-2011 TOTAL TRAFFIC

- **Total Traffic (Tons)**: 18,787,000
- **2012**: ~19% growth

#### Traffic by Type:
- **Containers (Cont')**
- **Bulk**
- **General Cargo**
- **Automatic Equipment**
THE PORTS SYSTEM IN ISRAEL

3 PORT COMPANIES-PORT OPERATIONS COMPANIES

IPAC- THE PORTS ASSETS COMPANY

MINISTRY OF TRANSPORT-ADMINISTRATION OF SHIPPING AND PORTS - THE REGULATOR

PORT PERFORMANCE INDICATORS (PPI)

PPI is required for:

Comparing port efficiency as one of the parameters (but not the only one)

Commercial negotiations between port operator and shippers

As a daily management tool for evaluating operational performance

Setting a benchmark for port directors
FROM THE SHIPPING LINE (THE CUSTOMER) POINT OF VIEW

THE MOST RELEVANT AND IMPORTANT PPI IS:

THE AMOUNT OF CARGO HANDELED BETWEEN TIME OF ARRIVAL OF VESSEL AND LEAVING THE PORT (TD)

ALL WHAT HAPPENS WITHIN THIS PERIOD IS NOT THE CONCERN OF THE CUSTOMER
AVERAGE PRODUCTIVITY PER 1h DEWLLING TIME =
TOTAL TRAFFIC/TOTAL STAYING TIME OF VESSEL IN PORT

\[ \frac{\sum_{i} (\text{NUMBER OF CONTAINERS EVERY SHIFT})_{i}}{\sum_{j} (\text{AMOUNT OF DWELLING HOURS OF VESSEL IN PORT})_{j}} \]

- All working shifts during period of examination
- All dwelling time of ships

COMMENTS:
- CONTAINER TRAFFIC MUST BE MEASURED IN BOX’S – NOT TEU
- INDICATORS CAN BE USED FOR GENERAL CARGO AND BULK TERMINALS, AS WELL
- INDICATORS CAN BE CALCULATED ON SHIFTS, DAILY, MONTHLY OR YEARLY BASIS
- ONE CAN DEVELOP INDICATORS FOR UTILIZATION OF STORAGE AREA
LIMITATION OF INDICATORS

- When comparing the indicators between ports attention should be drawn to:
  - Size of vessels calling the port
  - Ratio of full to empty containers
  - Amount of reshuffling of cont’ in the vessel
  - Types and mix of general cargo in comparison
  - Types and mix of bulk in comparison (Ton/M\(^3\))

INCREASING PERFORMANCE BY

- Avoid losing of time due to:
  - Discipline, maintenance, organization, and external reasons
  - Change to better technology of equipment
  - Improve handling system
  - Allocate more ganges to vessel
  - Improve information flow
PPI PRACTICE IN ISRAEL

SINCE 2005 THE ISREALI PORTS BECAME, UNDER LOW, PORT COMPANIES COMPETITION BETWEEN PORTS IS INTENSIVE

MINISTRY OF TRANSPORT- ADMINSTATION OF PORTS AND SHIPPING IS MONITORING PORT PERFORMANCE AND PUBLISHING THE THEM EVERY YEAR

PPI IN ISRAELI PORTS

• AVERAGE WORK PRODUCTIVITY PER 1h DWELLING = TOTAL TRAFFIC/DWELL TIME OF VESSELS

AVERAGE PRODUCTIVITY PER HOUR PER GANG = TOTAL TRAFFIC/WORKING HOUR/GANGS

AVERAGE PRODUCTIVITY PER ONE WORKING HOUR = TOTAL TRAFFIC/ WORKING HOURS
<table>
<thead>
<tr>
<th>Year</th>
<th>Average Waiting</th>
<th>Average Dwell Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>10.2</td>
<td>11.5</td>
</tr>
<tr>
<td>2001</td>
<td>10.4</td>
<td>11.3</td>
</tr>
<tr>
<td>2002</td>
<td>10.7</td>
<td>11.5</td>
</tr>
<tr>
<td>2003</td>
<td>11.0</td>
<td>12.0</td>
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<tr>
<td>2004</td>
<td>11.5</td>
<td>12.2</td>
</tr>
<tr>
<td>2005</td>
<td>12.0</td>
<td>12.5</td>
</tr>
<tr>
<td>2006</td>
<td>12.5</td>
<td>13.0</td>
</tr>
<tr>
<td>2007</td>
<td>13.0</td>
<td>13.5</td>
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<tr>
<td>2008</td>
<td>13.5</td>
<td>14.0</td>
</tr>
<tr>
<td>2009</td>
<td>14.0</td>
<td>14.5</td>
</tr>
<tr>
<td>2010</td>
<td>14.5</td>
<td>15.0</td>
</tr>
</tbody>
</table>

**Table 1:** Dwelling productivity per 1h inտարեկ տերիտորիաներ` 1h dwelling hour

**Table 2:** Ships’ dwelling and waiting times
IAPH – PORT OPERATION & LOGISTICS Committee
Container Terminal Productivity/Throughput Survey

1. Port name: ____________________
   Country: _____________________
   Do you measure container terminal productivity/throughput?
      \{ Yes \} \{ No \}
   If “NO”, end of survey - thank you for your cooperation.

4. Port Container Traffic in the year………:
   4.1 Boxes ____________________
   4.2 TEU’s ____________________

5. Do you believe that productivity/throughput should be reported by different ports using a consistent formula/definition?
   \{ Yes \} \{ No \}

6. Would you be willing to assist in efforts to standardize the productivity/throughput formula/definitions?
   \{ Yes \} \{ No \}

7. Would your port be willing to change your method of measuring productivity/throughput if a standard would be established by an IAPH task force?
   \{ Yes \} \{ No \}

8. Container Productivity/Throughput is currently measured on the following basis:
   8.1 \{ Boxes/crane-hour \}
   8.2 \{ Boxes/vessel-hour \}
   8.3 \{ Boxes/crane-shift \}

Is the container productivity/throughput calculation based solely on in-going and out-going box moves?
   \{ Yes \} \{ No \}

If “NO”, please detail other types of moves included in the calculation (i.e. hatch cover moves, reshuffling of stowed boxes, etc.)
__________________________________________________________________________________
Does the time element of the container productivity/throughput calculation include non-productive time, such as time waiting for berthing of vessel, time waiting arrival of gangs, lashing time, pin release/closing time, labor breaks, labor delays, equipment breakdown time, etc.)?

Yes ☐ No ☐

If "YES", please detail types of non-productive time that are included in the time element.

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

• Remarks

____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________
____________________________________________________________________

THANK YOU