International Benchmark Mainports

Landside accessibility

Jessica Hop
Ministry of Transport, Public Works and Water Management
The Netherlands
1. Introduction and background
2. Objectives
3. Methodology and mainport selection
4. Results mainport accessibility quality
5. Policy measures
6. Perception mainport user groups
7. Conclusions
Objectives

1. Determine accessibility quality
2. Investigate perception of mainport users
3. Formulate policy measures
Seaports

- Rotterdam (NL)
- Antwerp (BE)
- Felixstowe (UK)
- Hamburg (GE)
- Le Havre (FR)
- New York (USA)
- Singapore (SGP)
Selected mainports

Airports

• Schiphol (NL)
• Charles de Gaulle (FR)
• Frankfurt (GE)
• Heathrow (UK)
• John F. Kennedy (USA)
• Changi (SGP)
Mainport accessibility quality

Accessibility = the number of different places of activities that can be accessed within a determined period of time from the original location

Methodology: accessibility contours

1. Optimum point: maximum distance from the mainport until the edge of the accessibility contour

2. Accessibility surface: the surface that can be reached within a specific time duration
Accessibility seaports

Maximum accessibility

Maximum accessibility per modality

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Accessibility seaports

Accessibility contours

Best Practice: Port of Antwerp

Very good road accessibility and strong rail accessibility as a result of respectively:

- Geographical position
- High connectivity towards various directions
Accessibility airports

Maximum accessibility

Maximum accessibility per modality

<table>
<thead>
<tr>
<th>Airport</th>
<th>Number of km’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shohola Airport</td>
<td></td>
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<tr>
<td>Aéroport Charles de Gaulle</td>
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<tr>
<td>Changi Airport</td>
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<tr>
<td>Frankfurt Airport</td>
<td></td>
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<tr>
<td>Heathrow Airport</td>
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<tr>
<td>John F Kennedy Airport</td>
<td></td>
</tr>
</tbody>
</table>

Private car - free flow (90 min)  
Private car congestion - rush hour (90 min)  
Truck (90 min)  
Rail (120 min)
Accessibility airports

Accessibility contours

Best practice: Frankfurt Airport

Very good road and rail accessibility due to respectively:

- Geographical position
- Well-developed high speed lines (HSL)
Policy measures

Improvements of accessibility

• Port of Rotterdam
• International seaports
• Schiphol Airport
• International airports
### Schiphol Airport vs other airports

<table>
<thead>
<tr>
<th>Road accessibility</th>
<th>Travel time</th>
<th>Trend</th>
<th>Reliability</th>
<th>Trend</th>
<th>Capacity</th>
<th>Trend</th>
<th>Flexibility</th>
<th>Trend</th>
<th>Cost</th>
<th>Trend</th>
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</thead>
<tbody>
<tr>
<td>Schiphol</td>
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<td>-</td>
<td>4,6</td>
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<td>=</td>
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<td>=</td>
<td>4,3</td>
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<tr>
<td>CDG</td>
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<td>7,0</td>
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<td>2,0</td>
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<tr>
<td>Frankfurt</td>
<td>7,0</td>
<td>=</td>
<td>7,3</td>
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<td>7,0</td>
<td>+</td>
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<td>=</td>
<td>6,0</td>
<td>=</td>
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<tr>
<td>Heathrow</td>
<td>4,0</td>
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<td>5,0</td>
<td>-/=</td>
<td>4,0</td>
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<td>2,0</td>
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</tbody>
</table>

**Score ranking 1 – 10 (1 = poor score; 10 = excellent score)**

- Schiphol’s landside/road accessibility shows insufficient scores for all modalities
Port of Rotterdam vs Antwerp

<table>
<thead>
<tr>
<th></th>
<th>Travel time</th>
<th>trend</th>
<th>Reliability</th>
<th>trend</th>
<th>Capacity</th>
<th>trend</th>
<th>Flexibility</th>
<th>trend</th>
<th>Cost</th>
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<tr>
<td><strong>Antwerp</strong></td>
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<tr>
<td><em>Road</em></td>
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<td>4,5</td>
<td>-/=</td>
<td>5,0</td>
<td>-/=</td>
<td>5,5</td>
<td>=</td>
<td>5,5</td>
<td>-/=</td>
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<tr>
<td><em>Water</em></td>
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<td>7,0</td>
<td>-</td>
<td>7,0</td>
<td>+</td>
<td>8,0</td>
<td>-</td>
<td>8,0</td>
<td>-</td>
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<tr>
<td><strong>Rotterdam</strong></td>
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<tr>
<td><em>Water</em></td>
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<td>+</td>
<td>8,0</td>
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</tbody>
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*Score ranking 1 – 10 (1 = poor score ; 10 = excellent score)*

- Both countries are confronted with insufficient valuations on road accessibility
- Antwerp scores even slightly higher on water accessibility
Conclusions

Schiphol Airport

- Good performance on rail accessibility as a result of great density of the network and relatively high frequencies of services

- Road accessibility critical due to congestion, relatively low speed limits and geographical position, and needs to be improved substantially
Conclusions

Port of Rotterdam

1. Excellent water accessibility due to widespread waterway network
2. Good rail network owing to the network density and frequencies of services (only minor differences between the mainports)
3. Quality road network could be improved, primarily as of the level of congestion
« Thank you for your attention! »

Questions??

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Jessica Hop