Business planning for PPP in Ports

International experiences

by

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Introduction

• Framework for PPP projects in Ports
  – National Transport Plan
  – Restructuring policy for PPP in ports
  – Master plan for specific ports
  – Business plan for a specific business case
  – PPP: strategic paper for PPP project
  – Tender procedure

• Reasons for a framework:
  – Developing ports have broader economic objectives than private sector investment: it creates the boundary conditions for development
  – Integration policy with national plans is required
  – “Selling a business without knowing your business partner”

• International examples: Europe, Yemen, Croatia, Jordan
Features of port investments

• Ports are characterized by:
  – Capital intensive enterprises and space consuming activities
  – Needs to fit in spatial planning: access roads and rail infrastructure
  – Safety and environmental issues

• Total port costs in the value added chain are low, but the port is a crucial node in the logistic international chain:
  – Interactions with other modes of transport
  – A high and reliable service level is very important

• Reasons for public interest:
  – Economic impact for the region; employment, to attract business
  – Impact on town planning: tendency that ports move out of the city
  – Natural monopoly: especially the port basic infrastructure such as breakwater, shore protection, access channel and no optimal price setting can be realised via the market
National Transport Master Plan

• NTMP: national transport policy
• Scenario’s for future national development including
  – Industrial development areas, free trade zones, special economic zones
  – International trade by commodity and origin/destination
  – Concentration of population, consumption
  – Governmental policy including stimulation measures
• Transport corridors: air, road, rail, IWT, ports
  – Accessibility to the port to main OD areas
• Focussed on ports:
  – Areas for port development: exising port vs green port development
  – Type of ports: national, regional, local interest
  – Type of commodity: liquid and dry bulk, general cargo, containers
Restructuring policy

• Reasons for restructuring:
  – General: improve port efficiency, quality of service
  – Financial: reduce public expenditure, attract private capital
  – Administrative: depoliticize public administration, reduce bureaucracy
  – Economic: increase private sector participation, boost economic development, restructure port labour force

• The way to achieve it: restructuring policy
  – Modernisation of port administration
  – Liberalization or deregulation
  – Commercialisation
  – Privatization of port and terminal activities: infrastructure, terminals, port services
### Port organisation models

<table>
<thead>
<tr>
<th></th>
<th>Service port</th>
<th>Tool port</th>
<th>Land Lord model</th>
<th>Private port</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>Public</td>
<td>Public</td>
<td>Public</td>
<td>Private</td>
</tr>
<tr>
<td>Basic infrastructure</td>
<td>Public</td>
<td>Public</td>
<td>Public/Private</td>
<td>Private</td>
</tr>
<tr>
<td>Terminal infrastructure</td>
<td>Public</td>
<td>Public</td>
<td>Private</td>
<td>Private</td>
</tr>
<tr>
<td>Equipment</td>
<td>Public</td>
<td>Public</td>
<td>Private</td>
<td>Private</td>
</tr>
<tr>
<td>Labour/ operations</td>
<td>Public</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
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</tbody>
</table>

**Public Private Partnership**

- **Woks & Services Contracts**
- **Management & Maintenance Contracts**
- **Operation & Maintenance Concessions**
- **Build Operate Transfer Concessions**
- **Full Privatization**

**Extent of private sector participation**

NTDPC, Delhi, 6-8 February 2012
Tasks and responsibilities: Public vs Private

• Public sector:
  – Government: international conventions (e.g. IMO), transform into port laws and regulations for safety and environment (harbour master)
  – Port Authority: land policy and port development, implementation of environment & safety measures and provide port services
  – Create a level playing field:
    • Competition between ports and within the port
    • Regulation in case of monopolistic situation
  – Other public authorities such as Customs, Coast Guard, Immigration

• Private sector:
  – Terminal operators: cargo handling; investments in terminal infrastructure, superstructure, equipment,
  – Other port services such as towage, pilots and trade related companies such as forwarders, shipping agents
Master plan for a specific port

• Ports’ vision and mission in the national/regional context
• Physical characteristics of the port area
  – Land/water area, water depth, port lay-out
• Throughput by commodity group and vessels T=0-5-10-25
• Confrontation of demand and supply
• Investment projects: sea side and land side
  – Basic port infrastructure: waterdepth, channel
  – Terminals: by type, land ares, terminals, accessibility
• Investment costs & operational costs
• High level financial analysis & Cost Benefit Analysis
• Rolling masterplan: every 3-5 years till the port is mature
• Prioritisation and implementation schedule
Solutions: “Think out of the box”

Port of Venice

Perpetuma concept

Floating container facility
Business plan for a specific project/terminal

- Detailed trade and traffic forecast
  - Global and national economic developments: GDP, trade patterns
  - Competitive position: market share, tariffs, service level

- Investment program
  - Basic infrastructure: water depth, channel, turning basin
  - Terminal infrastructure: quay wall/jetty, terminal area, utilities
  - Equipment: ship to shore, yard handling, horizontal transport
  - Accessibility: rail, road, IWT

- Cost drivers:
  - Operational costs: labour, maintenance, energy,
  - Non-operational costs: overheads, office, marketing, financing, etc

- Financial analysis: P&L, balance sheets, financial indicators

- Sensitivity and risk analysis
Use of financial model

- Existing port or terminal vs green field project
- Business plan for the Port Authority incl other revenues such as port dues; especially needed for smaller ports
- Business plan from the operators point of view
- Should be able to calculate the result of several scenario’s
  - Throughput and traffic forecast
  - Investment programmes
  - Escalation of costs and revenues
  - Financing options: equity, loans, loan conditions
  - Types of concession fees: fixed – variable fees
  - Show the financial results for the Port and the operator
  - Sensitivity analysis
Flow chart financial model
Business plan and financial model

• To assess feasibility of the project
  – FIIR private sector: > 12.5% on the project; > 20% on equity
  – FIIR public sector: 5%; EIIR > 15%

• To assess the impact of critical cost drivers and success factor: sensitivity analysis combined with risk analysis

• The results and the model to use during the tender evaluation: creates a coherent system for evaluation

• The model to use during contract negotiations in order to assess quickly the consequences of critical changes in the assumptions: e.g. traffic forecast, cost drivers, rate of inflation
Risk allocation

• Country risks: non controlable
  – Political risks
  – Commercial risks: inflation, exchange rate, taxation
  – Legal risks: transfer of profits

• Project risks: controlable
  – Development risks: trade and traffic
  – Construction risks: investments
  – Operational risks: cost drivers

• Allocation of risks between the public and private sector

• Win-win situation for both parties

• Sustainability: economic, financial, safety & environmental
Yangshan, China

- First Phase 5 mln: potential 25 mln TEU
- Other alternatives had lower investment & operational costs
- Risk analysis: danger for down time due to sedimentation
- Bridge 30 km: islands transformed into terminal area
Strategic plan for PPP projects

• Aim: assess the most optimal position for developing the port
• Depends on the main reason for PPP nature e.g. lack of liquid means, improvement of efficiency
• Define division of investment for private vs public sector
• What type of PPP contract is suitable: BOT, EOT, DBFOM, etc
• Determine the financial impact of each option for both parties
• Selection of preferred option
• Identify potential private parties in case of multi user facility:
  – terminal operators, shipping companies
• Direct negotiations in case of dedicated terminals or tender strategy for multi user facilities
Tender procedure

• **Transparent procedures to be followed**
  – National regulations, IFI, commercial banks, Port Authority

• **Bidding documents**
  – Project description
  – Instructions to bidders
  – Selection criteria
  – Draft concession agreement

• **Q&A, data room, site visits**

• **Evaluation and selection of bids**

• **Contract negotiations**

• **Conclusion of contract and implementation**
Criteria tender evaluation

• Credentials of bidders for shortlist
  – Financial data of the (mother) company
  – Bidder’s experience in similar projects: number and size
  – Local partners involved

• Technical proposal
  – Terminal layout and Infrastructure
  – Construction programme
  – Equipment and other cost drivers
  – Business and operational plan

• Financial proposal
  – Commitments given
  – Concession fee: fixed and variable
Tender evaluation and contract negotiations

• Bidders offer:
  – Vision on the project
  – Functional specifications of the project
  – Business plan: trade and traffic forecast
  – Financial model
  – Bankability of the project

• During contract negotiations
  – Concession contract to be flexible and Model Concession Agreement could change according to the result of the negotiations
  – Take into the local circumstances, the proposed changes of the eligible bidder and find solutions
Port of Aden
Case: Port of Aden - ACT

• Excellent location
  – Natural deep water
  – Close to the EW trunk lines passing through the Suez Channel
  – Free Trade Zone under development
  – Cargo forecast up to 3-4 mln TEU for 2030: mainly T/S

• History
  – ACT (1999) developed by Yemeninvest and PSA
  – US Cole incident; cargo dropped, agreement was cancelled
  – Port transferred to Yemen Port Authority under the Minister of Transport: management contract

• Transshipment hub with limited number of liners (PIL 90%)
  – Existing terminal capacity up to 750,000 TEUs
  – Extension possibilities up to additional 1.5 – 2.5 mln TEUs
Case: Port of Aden - ACT

• ACT has been transferred from Aden Free Trade Zone to MoT by Council of Ministers resolution
• Ministry of Transport (MoT) responsible for Yemen PA
• Yemen PA responsible for:
  – Safety and environment in the port, marine services
  – Concession contracts with several terminal operators
• Lack of clear Port Legislation and Port Rules; Regulations based on Aden Port Trust Law 1955 and amendments thereto
• Policy: to involve the private sector and to retender the project in order to develop the Port as international transhipment hub
PPP options Port of Aden

- Management contract: expansion possibilities
- Concession agreements
  - Expansion possibilities and costs
  - Allocation of investments: Port Authority vs operator
- Calculated financial impact of each option for each party:
  - Revenues and Costs, FIIR, payback periods, etc
- Selection of preferred alternative beneficial for both parties
- Take over of existing terminal facilities including equipment and a BOT for the extension of the container terminal
- Combination of fixed for the land and variable TEU fee related to throughput with minimum guaranteed volumes
Tender in 2005 and Deal in 2008

- Tender procedure 2005: stopped 2006 after tender evaluation
- 2007 direct negotiations with preferred operator
- Joint Venture based on 50%-50%
  - Capital YGAPC (Port Authority) in kind (equipment), DPW in cash
  - Risk sharing between YGAPC and DPW
- Lease agreement between JVco (concessionaire) and YGAPC
- Management agreement with Dubai Ports World
  - Management, marketing, operations
  - Labor under responsibility of DPW
- Port Services agreement with YGAPC
- Business and Financial Plan for 5-7 years
## Features of the investment

<table>
<thead>
<tr>
<th>Item</th>
<th>2005 offer</th>
<th>2008 deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quay length Phase 1</td>
<td>400 m</td>
<td>400 m</td>
</tr>
<tr>
<td>Total quay length</td>
<td>2,000 m</td>
<td>2,000 m</td>
</tr>
<tr>
<td>STS cranes 3,5 mln</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>Crane productivity</td>
<td>30 moves/h</td>
<td>Objective 35 moves/h</td>
</tr>
<tr>
<td>Quay extension</td>
<td>1,750 TEU/m</td>
<td>1,600 TEU/m</td>
</tr>
<tr>
<td>Minimum throughput</td>
<td>1,7 mln TEU</td>
<td>Upto 2,3 mln TEU</td>
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## Payments to Port Authority

<table>
<thead>
<tr>
<th>Item</th>
<th>2005 offer</th>
<th>2008 deal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land lease fixed</td>
<td>(x \text{ mln } ) $</td>
<td>(2x \text{ mln } ) $ Included in above (x \text{ mln } ) $</td>
</tr>
<tr>
<td>Extension Phase 1 (12 ha)</td>
<td>(x \text{ $ per m2} )</td>
<td>(x \text{ $ per m2} ) US CPI</td>
</tr>
<tr>
<td>Extension Phase 2 (year 7)</td>
<td>(x \text{ $ per m2} ) Indexed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.5 % \text{ per annum} )</td>
<td></td>
</tr>
<tr>
<td>Variable component</td>
<td>(x \text{ $ per TEU declining scale} )</td>
<td>(15 % \text{ of revenues} )</td>
</tr>
<tr>
<td>Profit sharing</td>
<td>None</td>
<td>(50 % \text{ of JVco (shares)} )</td>
</tr>
<tr>
<td>Port dues</td>
<td>As per port tariffs but competitive</td>
<td>As per port tariffs</td>
</tr>
<tr>
<td>Port Services</td>
<td>As per port tariffs but competitive</td>
<td>As per port tariffs</td>
</tr>
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Port of Aden - ACT: Lessons learned

• Observations:
  – Weak legal and institutional framework
  – Master plan on very high level without any financials
  – Based on business plan a BOT became the preferred option
  – Tender procedure according to international rules, but due to political reasons not fully followed: e.g. shortlisting was cancelled and all interested parties could submit a bid
  – Tender procedure was cancelled in 2006 due to the fact no agreement could be reached on the winning bid
  – In 2007 direct negotiations with preferred operator

• Price is not the only determining factor for selection
• Concession agreement was tailor made during contract negotiations: flexible approach
Port of Rijeka, Croatia

- Under MOT
- Port of National interest
- Restructuring in 2000
- World Bank Gateway project
- Policy land lord model
  - Priority concession
  - Oil terminal 2005
  - Several terminals
  - Container terminal 2011
- Under process
  - Zagreb Container Terminal
  - Delta area
Forecast Container Trade North Adriatic Ports

Forecast 2010-2030 TEU

<table>
<thead>
<tr>
<th>Year</th>
<th>Throughput - low scenario</th>
<th>Throughput - medium scenario</th>
<th>Throughput - high scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>770,000</td>
<td>1,540,000</td>
<td>3,080,000</td>
</tr>
<tr>
<td>2010</td>
<td>1,540,000</td>
<td>3,080,000</td>
<td>5,390,000</td>
</tr>
<tr>
<td>2015</td>
<td>2,310,000</td>
<td>4,620,000</td>
<td>6,160,000</td>
</tr>
<tr>
<td>2020</td>
<td>3,080,000</td>
<td>5,390,000</td>
<td>6,930,000</td>
</tr>
<tr>
<td>2025</td>
<td>3,850,000</td>
<td>6,160,000</td>
<td>7,700,000</td>
</tr>
<tr>
<td>2030</td>
<td>4,620,000</td>
<td>6,930,000</td>
<td>8,470,000</td>
</tr>
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**Scenarios Container trade**

**Growth 2010-2040**

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</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>-9.6%</td>
<td>-0.1%</td>
<td>6.2%</td>
<td>7.8%</td>
<td>7.8%</td>
<td>7.7%</td>
<td>7.4%</td>
<td>5.7%</td>
<td>4.6%</td>
</tr>
<tr>
<td>Medium</td>
<td>-9.2%</td>
<td>0.1%</td>
<td>7.5%</td>
<td>8.2%</td>
<td>8.2%</td>
<td>8.1%</td>
<td>7.9%</td>
<td>6.6%</td>
<td>5.3%</td>
</tr>
<tr>
<td>High</td>
<td>-7.9%</td>
<td>1.4%</td>
<td>7.9%</td>
<td>8.6%</td>
<td>8.7%</td>
<td>8.6%</td>
<td>8.3%</td>
<td>7.5%</td>
<td>6.8%</td>
</tr>
</tbody>
</table>

- India, China and Far East will again be the production areas in the coming decades
- International trade will recover and the import flows to Europe will be originated from this part of this world
Zagreb Container Terminal main features

- **Phase 1:** 400 meter of quay wall to be financed by the PRA/World Bank
- **Phase 2:** an extension of 280 meters, to be financed by the operator
- **Phase 3:** Long term development and an extension taking into account the area of the refinery.

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<thead>
<tr>
<th></th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
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<tbody>
<tr>
<td></td>
<td>Option 1</td>
<td>Option 2</td>
<td>Option 1</td>
</tr>
<tr>
<td>Throughput (TEU/yr)</td>
<td>290,000</td>
<td>460,000</td>
<td>380,000</td>
</tr>
<tr>
<td>Quay length (m)</td>
<td>400</td>
<td>400</td>
<td>680</td>
</tr>
<tr>
<td>Quay performance (TEU/m)</td>
<td>725</td>
<td>1,150</td>
<td>559</td>
</tr>
<tr>
<td>Stack yard (ground slot)</td>
<td>1,650</td>
<td>2,650</td>
<td>2,150</td>
</tr>
<tr>
<td>Number of STS cranes</td>
<td>3</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Average workload per quay crane (TEU/yr/cr)</td>
<td>96,667</td>
<td>115,000</td>
<td>95,000</td>
</tr>
</tbody>
</table>
ZCT options and phases
Problems encountered

• Masterplan was made and approved
• No integrated solution for container handling in the port
• Competition: one or more operators in the port
• Decisions not all taken:
  – final concession area, area to be obtained from railway
  – historical buildings
• Lack of own equity PRA; financing via IBRD funds/MoT
• Accessibility of the terminal: road and rail via Slovenia
• Decision making process slow, need approvals from MoT
• Success of the project depends on access to the terminal
• Project started, but not all conditions are fulfilled
Delta project: main issues

• Restructuring of old port area and transformed into valuable city area for several functions
• Maritime Domain Law hampers the bankability of the project
• One or more concessions due to various types of activities
• Waste water plant to be relocated
• Architectural Contest according to Croatia rules
Project definition and tender strategy

**Existing strategy**
- One concession
- Clean area
- Urban Design Contest after signing concession
- Revenues xx mln year
- Time needed 1-1.5 year for development

**Alternative strategy**
- Several concessions
- Developed area
- Urban Design Contest prior to concession (s)
- Revenues 3 times higher
- More time needed due to development of area
- Involvement Port Authority

• In the phase of preparing the tender documentation
• Many ports keep this activity within their business: e.g. Port Barcelona, Fisherman’s Wharf (St Francisco)
• Business plan and tender strategy main topic
Case Port of Aqaba, Jordan

• During the period 2004 – 2009 three existing terminals were privatized, as well as the Marine Services and Aqaba Logistic Village:
  – Container terminal to APM Terminals
  – Potash/Phosphate Terminal to Arab Potash Company Ltd and Jordan Phosphate Mines Company Ltd
  – Cement Terminal to Jordan Cement Company Ltd
  – Marine Services to Lamnalco Ltd
  – Aqaba Logistic Village to Container Logistics Village Company Ltd

• Aqaba Development Corporation applied to landlord principles, no sale of port land was allowed

• All concessions were based on model concession but modified according the specific requirements
Aqaba Phosphate Terminal and New Port
Characteristics of Aqaba Concessions

- All concessions were BOT (Build/Operate/Transfer)
- Negotiations were conducted on the basis of direct negotiations except for the Marine Services and the Aqaba Logistic Village
- A separate financial model was developed for all projects by ADC in order to facilitate tariff and fee negotiations
- A system of fixed (land rent) and variable fees (TEU fee or tonne fee) was uniformly applied, except for the Aqaba Logistics Village where the fee was based on Gross Revenue.
- Term of the concessions was average 35 years
- All concessions comprised provisions for termination compensation
Lessons Learned

• The Port Authority a Port Development Plan based on the mission form the national transport plan and has to be updated

• Port Authorities should, based on the vision and mission statement, act as a business entity and prepare a rolling Master plan and Business Plan for any terminal project and/or PPP project including a risk assessment for both parties

• Port Authorities should be autonomous and be able to negotiate independently a Concession Agreement

• A Model Concession Agreement must be flexible applied and adopted to the circumstances and results of contract negotiations

• The concession fee is one of the factors to be taken into account; the vision of the potential business partner is essential
THANK YOU FOR YOUR ATTENTION

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