Panama Canal Expansion: Increase in Route Value and Service to World Maritime Industry

Alberto Alemán Zubieta
Administrator
Panama Canal Authority
1999 – World expectation on Panama’s capacity to manage and operate the Panama Canal.
## Main Differences in Business Models

<table>
<thead>
<tr>
<th>USA PCC</th>
<th>PANAMA ACP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign enclave</td>
<td>Inalienable patrimony of the Republic of Panama</td>
</tr>
<tr>
<td>Managed by its principal user</td>
<td>Administered by its owners</td>
</tr>
<tr>
<td>Responded to US interests</td>
<td>Profitable and competitive enterprise</td>
</tr>
<tr>
<td>Non-profitable agency</td>
<td>Resource Management</td>
</tr>
<tr>
<td>Budget administration</td>
<td>Operates near capacity</td>
</tr>
<tr>
<td>Ample capacity</td>
<td>Faces increase competition</td>
</tr>
<tr>
<td>Near monopoly</td>
<td></td>
</tr>
</tbody>
</table>
USA PCC MISSION

- Ensure the safe and efficient operation of the Canal;
- Take all appropriate steps to achieve a seamless transition to Panamanian control of the Canal on December 31, 1999.
PANAMA ACP MISSION

➢ To produce maximum sustained benefit from our geographic position.
Transition in Business Model

USA PCC Model

Break-Even Operation
Managed by its principal user

Panama ACP Business Model

For Profit, and Efficient Operation
Managed by its Owner
ACP Panama Canal Business Model

The Legal structure is based on:

- The Constitution of the Republic of Panama
- The Organic Law of the Panama Canal Authority
- ACP regulations.

Some of the key elements of the Canal Business Model are:

- The Canal constitutes an inalienable patrimony of the Panamanian Nation.
- The Canal has to be efficient and profitable
- The Canal has its own patrimony and the right to manage it.
- Special employment regime based on the principles of merit and equal opportunity.
- Special procurement and contracting regime.
- Code of Ethics and Conduct.
- Special procedure for dispute resolution.
- Strikes are prohibited.
The Canal’s current legal framework changes the business philosophy to one oriented to enhance the value of the route by providing a safe, reliable and efficient service to its customers while generating a return to its owner, The Republic of Panama.
Panama Canal Change in Business Model

Historical Background

- 2000 – Change in the reservation system rules
- 2002 – Tolls are modified for the first time under Panamanian administration.

Differentiated market segment by type of vessel is established.

- Dry bulk carriers
- Container ships
- Liquid bulk
- Refrigerated cargo
- Vehicle carriers
- Passenger ships
- General cargo
- Others
2005 – Change in the admeasurement system of container vessels. The phased-in implementation over three years, is as follows:

- May 2005 $42 per TEU.
- May 2006 $49 per TEU.
- May 2007 $54 per TEU.

April 2006 – Implementation of a daily reservation slot made available through an auction process to the best bidder.
2007 - Proposal to Modify the Regulations for the Admeasurement of Vessels for the Panama Canal and the Panama Canal Tolls

The proposal announced on February 2 includes:

- Administrative changes in the admeasurement Rules
- New admeasurement method for passenger ships
- Toll adjustment by segment
CAPITAL INVESTMENT

- Dredging
- Locomotives
- Hydraulic Conversion
- Technology
- Track system
- Tug Boats
Panama Canal Market Share in N.E. Asia – U.S. East Coast Route

Source: Estimate based on different industry sources (PIERS, AAR, ACP Ship Data Banks)

Panama Canal

US Intermodal System

Suez Canal

1999 2000 2001 2002 2003 2004 2005
Growth of Panamax Vessel Transits
100’ (30.5m) + Beam
FY1995 – FY2006

Fiscal Year

% of Total Transits

20%
25%
30%
35%
40%
45%
50%
55%


27.1% 30.1% 29.0% 30.7% 33.4% 35.4% 36.3% 38.5% 40.4% 42.6% 44.5% 46.6%
Average Canal Waters Time

<table>
<thead>
<tr>
<th>Year</th>
<th>With reservation</th>
<th>Without reservation</th>
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<tr>
<td>1999</td>
<td>17.2</td>
<td>40.0</td>
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<tr>
<td>2000</td>
<td>16.7</td>
<td>33.9</td>
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<tr>
<td>2001</td>
<td>15.6</td>
<td>26.7</td>
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<tr>
<td>2002</td>
<td>16.1</td>
<td>33.0</td>
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<tr>
<td>2003</td>
<td>16.2</td>
<td>28.6</td>
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<td>2004</td>
<td>16.4</td>
<td>37.4</td>
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<tr>
<td>2005</td>
<td>16.5</td>
<td>34.5</td>
</tr>
<tr>
<td>2006</td>
<td>16.0</td>
<td>37.9</td>
</tr>
</tbody>
</table>

Available Slots

- 1999: 21
- 2000: 21
- 2001: 21
- 2002: 21
- 2003: 21
- 2004: 21
- 2005: 22
- 2006: 24
Accidents
FY1996 - FY2006

Year | Accidents
--- | ---
1996 | 37
1997 | 32
1998 | 24
1999 | 28
2000 | 29
2001 | 17
2002 | 17
2003 | 12
2004 | 10
2005 | 12
2006 | 10
PCUMS Net Tons per Market Segment
(in millions - FY 2000-2006 / 2007 proj)

- Containerships
- Dry Bulk
- Liquid Bulk
- General Cargo
- Reefers
- Cruise
- Vehicle carriers
- Others

Years: 1995 to 2007 (proj.)
Interoceanic Route and the Canal’s Value for Panama and the World
Rapid growth in global container demand

Source: Drewry Container Market Quarterly Sept06
## Trans-Pacific Eastbound Demand Growth

<table>
<thead>
<tr>
<th>Source</th>
<th>2007e</th>
<th>2008e</th>
<th>2009e</th>
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<tbody>
<tr>
<td>PIERS</td>
<td>9.5%</td>
<td>10.3%</td>
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<td>Global Insight</td>
<td>8.8%</td>
<td>10.6%</td>
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<td>Drewry</td>
<td>9.9%</td>
<td>10.2%</td>
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<tr>
<td>Morgan Stanley</td>
<td>10-11%</td>
<td>10-11%</td>
<td>10-11%</td>
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<tr>
<td>Goldman Sachs</td>
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<td>11%</td>
<td>10.3%</td>
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<tr>
<td>Clarkson</td>
<td>12%</td>
<td>n/a</td>
<td>n/a</td>
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<tr>
<td>UBS</td>
<td>8%</td>
<td>10%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Source
Evolution of the world TEU carrying capacity

- **1980**: 2.91% of 68.60% of 8.1M TEUs
- **1990**: 17.51% of 81.15% of 1.6M TEUs
- **1996**: 26.35% of 5.05% of 2.8M TEUs
- **2011 (Including newbuildings on order)**: 31.32% of 28.18% of 12.1M TEUs

- **June 2006**: 33.49% of 37.34% of 8.1M TEUs

**Legend**:
- Other %
- TEUs Panamax %
- TEUs Post Panamax %
Infrastructure Issues: Current and Future

- Container imports are expected to double by 2020
- Rail freight tonnage is expected to increase by 50% by 2020
- Air cargo volume is expected to increase by 5% every year through 2016
- From 1970 to 2003, vehicle travel on highways rose by 161% but road mileage only increased by 6%
- Congestion costs US$63 billion in wasted time & fuel
- Half of the nation’s 257 locks on inland waterways are functionally obsolete
- Of the 590,750 bridges, 27% are structurally deficient or obsolete
- Most ports have not been dredged to handle the 10,000-TEU jumbo containerships being built

Source: American Society of Civil Engineers (ASCE) – 2005
Report Card for America’s Infrastructure, U.S. DoT
The improved existing Canal could sustainably handle up to 330 - 340 million annual PC/UMS tons.
Pospanamax Locks and Vessel Dimensions

Existing Locks

- Chamber Length: 305m (1,000')
- Max. Vessel LOA: 294.3m (965')
- Draft: 33.5m (110')
- 4,500 TEU

New Locks

- Chamber Length: 427m (1,400')
- Max. Vessel LOA: 366m (1,200')
- Draft: 49m (160')
- 12,600 TEU
Program Components
Dredging of the Sea Entrance Navigation Channels

Pacific Entrance
(6.5 M $m^3$ - Dredging)
1 Contract

225m (740´)
Program Components
Dredging of the Sea Entrance Navigation Channels

Atlantic Entrance
(Dredging - 14 M m³)
1 Contract

Width: 225m (740´)
Program Components

Pospanamax Locks

Pacific and Atlantic Locks
(29.66 – M m³ Dry Excavation)
1 Contract
Program Components
Dredging of Gatun Lake and Culebra Cut Navigation Channels

Deepening and Widening of Gatun Lake and Culebra Cut Navigation Channels
(Dredging - 23 M m³)
Program Components
Pacific Locks North Access Channel

Pacific Locks
North Access Channel
46M m³
5 Contracts
Maximum Sustainable Capacity of the Canal

**Historical**

- 280 - 290 million PCUMS per year (FY 2007 - 2008)

**Forecast**

- 330 - 340 million PCUMS per year (FY 2011 - 2012)

- Max Sustainable Capacity of Expanded Canal:
  - 508

<table>
<thead>
<tr>
<th>Year</th>
<th>Maximum sustainable capacity</th>
<th>Manageable demand</th>
<th>Probable Demand</th>
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<tr>
<td>95</td>
<td>280</td>
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<td>25</td>
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</tbody>
</table>
Third Set of Locks

Existing locks

New locks

1

2

3
Conceptual Design
Location for the new Pacific Locks and access channel
Location for the new Atlantic Locks
Main Logistics Hubs

SHANGHAI  BUSAN  SHENZHEN  HONG KONG  SHENZHEN  HAMBURG  ROTTERDAM  ALGECIRAS  PANAMA  FREEPORT  KINGSTON  NY/NJ  HAMPTON RDS  LA/LB  SAVANNAH  DUBAI
Ports that Connect with Mother Ships

MANZANILLO
LAZARO CARDENAS
ACAPULCO
SALINACRUZ
SAN JOSE
PUERTO QUETZAL
ACAJUTLA
LA LIBERTAD
CORINTO
PUERTO SANDINO
PUNTARENAS
CALDERA
GOLFITO
PUERTO ARMUELLES
BALBOA
BUENAVENTURA
TUMACO
ESMERALDAS
GUAYAQUIL
PAITA
CALLAO
ANTOFAGASTA
VENTANAS
VALPARAISO
SAN ANTONIO
TAMPICO
VERACRUZ
COATZACUALCOS
BELICE CITY
PUERTO CORTES
PUERTO CASTILLA
PUERTO CABEZAS
EL BLUFF
PUERTO LIMON
CHIRIQUI GRANDE
CRISTOBAL-MIT-EVERGREEN
CARTAGENA
BARRANQUILLA
PUERTO BOLIVAR
PUERTO CABELLO
LA GUAIRA
Value of the Interoceanic Route and the Panama Canal Service

Ports are interconnected through Weekly Port Container Services using the Panama Route

Source: ACP Database and Compair Data - 2006
Port Development in Panama

Manzanillo International Terminal (MIT)

Colon Container Terminal

Panama Ports Company – Balboa

Panama Ports Company – Cristobal
1996: 235 KTEUs
2006: 2.94 MTEUs
<table>
<thead>
<tr>
<th>Panamax Cranes</th>
<th>PPX</th>
<th>Total</th>
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<td>PPC-BCZ</td>
<td>7</td>
<td>8</td>
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<tr>
<td>PPC-CRI</td>
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<td>3</td>
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<tr>
<td>CCT</td>
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<td>6</td>
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<tr>
<td>MIT</td>
<td>2</td>
<td>14</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
<td><strong>31</strong></td>
</tr>
</tbody>
</table>
Forecast
2006: 2.94 MTEUs
2010: 4.6 MTEUs
2015: 7.4 MTEUs
Panama: America’s Most Important Logistics and Transportation Hub
Panama Canal Expansion: Increase in Route Value and Service to World Maritime Industry

Alberto Alemán Zubieta
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Panama Canal Authority