Case Study: Transportation Infrastructure in Saudi Arabia: Application of BOT

CEM 525
PROJECT DELIVERY SYSTEMS

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The Transport Sector

- 4.5% of Public Expenditures (67 billion US$- 2003) spent on Transport/Infrastructure

- **Roads**: 150,000 Km (50,000 km paved).

- **Railways**: 1000 km (550 km for freight; 450 km for passengers).

- **Ports**: 8- commercial/industrial (handling 105 m tons/year).

- **Airports**: 25 of which 3 International (handling 30 m passengers/year).
Transportation Authorities in Saudi Arabia

- The Ministry of Transportation (MOT)
- Saudi Railway Organization (SRO)
- Saudi Ports Authority (SPA)
- Civil Aviation Presidency
The high cost of maintenance and the need for further expansion are primary motivation for seeking private financing for road network development.

Around 5000 Km of super highways are to be built under BOT concept, out of which 3952 Km have been already planned.

Toll roads will be used to finance the development and maintenance of road network.
<table>
<thead>
<tr>
<th>Country</th>
<th>Total Road Network</th>
<th>Total Expressway Network</th>
<th>Tolled Road</th>
<th>Tolled Roads as % of total</th>
<th>Tolled Roads as % of Expressway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>216,000</td>
<td>10,400</td>
<td>9,800</td>
<td>4.54%</td>
<td>94%</td>
</tr>
<tr>
<td>France</td>
<td>966,000</td>
<td>14,886</td>
<td>6,305</td>
<td>0.65%</td>
<td>42%</td>
</tr>
<tr>
<td>Hungary</td>
<td>158,600</td>
<td>435</td>
<td>57</td>
<td>0.20%</td>
<td>100%</td>
</tr>
<tr>
<td>Indonesia</td>
<td>260,000</td>
<td>530</td>
<td>530</td>
<td>1.77%</td>
<td>86%</td>
</tr>
<tr>
<td>Italy</td>
<td>314,360</td>
<td>6,444</td>
<td>5,550</td>
<td>0.81%</td>
<td>61%</td>
</tr>
<tr>
<td>Japan</td>
<td>1,144,360</td>
<td>15,079</td>
<td>9,219</td>
<td>2.44%</td>
<td>100%</td>
</tr>
<tr>
<td>Korea, Rep. Of</td>
<td>77,000</td>
<td>1,880</td>
<td>1,880</td>
<td>1.20%</td>
<td>66%</td>
</tr>
<tr>
<td>Malaysia</td>
<td>94,000</td>
<td>1,702</td>
<td>1,127</td>
<td>1.87%</td>
<td>100%</td>
</tr>
<tr>
<td>Mexico</td>
<td>303,262</td>
<td>5,683</td>
<td>5,683</td>
<td>0.16%</td>
<td>57%</td>
</tr>
<tr>
<td>South Africa</td>
<td>525,000</td>
<td>1,440</td>
<td>825</td>
<td>0.66%</td>
<td>31%</td>
</tr>
<tr>
<td>Spain</td>
<td>343,200</td>
<td>7,194</td>
<td>2,255</td>
<td>0.46%</td>
<td>n/a</td>
</tr>
<tr>
<td>Thailand</td>
<td>64,600</td>
<td>n/a</td>
<td>300</td>
<td>0.09%</td>
<td>n/a</td>
</tr>
<tr>
<td>Philippines</td>
<td>160,000</td>
<td>n/a</td>
<td>140</td>
<td>0.04%</td>
<td>n/a</td>
</tr>
<tr>
<td>Brazil</td>
<td>1,980,000</td>
<td>n/a</td>
<td>856</td>
<td>0.00%</td>
<td>n/a</td>
</tr>
<tr>
<td>Chile</td>
<td>79,800</td>
<td>n/a</td>
<td>3</td>
<td>0.40%</td>
<td>n/a</td>
</tr>
<tr>
<td>China</td>
<td>1,180,000</td>
<td>n/a</td>
<td>4,735</td>
<td>1.24%</td>
<td>n/a</td>
</tr>
<tr>
<td>Colombia</td>
<td>107,000</td>
<td>n/a</td>
<td>1,330</td>
<td>3.85%</td>
<td>n/a</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>1,760</td>
<td>n/a</td>
<td>68</td>
<td>0.00%</td>
<td>n/a</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>372,000</td>
<td>n/a</td>
<td>8</td>
<td>0.11%</td>
<td>n/a</td>
</tr>
<tr>
<td>USA</td>
<td>6,420,000</td>
<td>n/a</td>
<td>7,363</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Distances in Km)

Tolled and Other Roads in Selected Countries
Source: World Bank, 2000
Road Transportation (contd)

- With the fast deterioration of the roads in Saudi Arabia, **ROT (Rehabilitate Operate Transfer)** type project delivery methods can play significant role in the expansion of the existing road network.
Toll types/ Rates

- The BOT entails the collections of toll from the users of the road.
  - Real tolls and,
  - Shadow tolls.
East-West Railway Project (Landbridge)

Saudi Arabia is comparable to Western Europe in size and is among the 25 largest economies in the world ...

- 57 locomotives
- 75 passenger coaches
- 2,200 freight wagons
- 300 million passenger-km/year
- 1.0 billion ton-km of cargo/year

Riyadh
Hofuf
Dammam
Haradh

2nd Track: 449 km built in the 1980s and used by passenger trains

1st Track: 556 km built in the 1950s and now used only for freight service.

yet, rail network is relatively modest...
Railways Expansion: Landbridge

Construction of a 950 km new line between Riyadh and Jeddah
Construction of a 115 km new line between Dammam and Jubail

Source: National Commercial Bank
Saudi Landbridge Project Details

The Supreme Economic Council: Approved private sector participation in the implementation of the project on a Build, Operate and Transfer (BOT) basis

The Council assigned responsibilities as follows:

- Inter-ministerial Steering Committee to supervise implementation, chaired by the president of SRO
- Saudi Railways Organization (SRO) as Executing Agency for the project
- The concessionaire will Design, Finance, Build, Operate and Transfer the project after an agreed duration
### Saudi Landbridge Project Details

#### Design speed

<table>
<thead>
<tr>
<th>Passenger trains</th>
<th>Freight trains</th>
</tr>
</thead>
<tbody>
<tr>
<td>250 Km/h</td>
<td>140 Km/h</td>
</tr>
</tbody>
</table>

#### Operating speed

<table>
<thead>
<tr>
<th>Passenger trains</th>
<th>Freight trains</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 220 Km/h</td>
<td>Up to 120 Km/h</td>
</tr>
</tbody>
</table>
Railway Expansion Program will add 3,200 km of track to the existing network ...

... connecting all major cities in the Kingdom
Major Sources of Finance

- Equity
- Debt
- Islamic Finance
  - The applicability of Islamic finance to large infrastructure project was first demonstrated in 1993 with the Hub river power project in Pakistan.
Financial Factors

• The success of BOT project is closely linked with rising of finance
• Equity must be raised from local investors/developers
• Debt can be raised through commercial banks/ international banks/Arab banks

Financings in Saudi Arabia for SABIC projects
Source: Thompson, 2001
BOT is found to be most attractive and desirable option for the development and expansion of transportation facilities.

Lack of adequate awareness among owners and contractors regarding the BOT is significant obstacle in the way of adopting BOT.
Conclusion

The major positive factors for application of BOT in Saudi Arabia are

- Strong government commitment
- Demand for projects
- New foreign investment law.
- Tax Reduction
- Availability of Equity
- Stable and Free convertible Saudi Riyal
**Conclusion**

- ROT type project delivery methods can play significant role in the maintaining the existing road network.

- BOT is feasible option for the expansion of railways in the Kingdom.
Establishment of BOT center can be the key to design and structuring of BOT projects. A BOT center should be established with the following objectives:

- To disseminate information and knowledge regarding the public-private partnership practices
- To serve as main conduct between the private sector investors and government with aim of coordinating the implementation of BOT projects.

**Recommendations**