Business cases:
Bankable Projects

Prof. Dr. Andrea Giuricin
Special Advisor for the CEO of NTV - ITALO
Senior Rail consultant at WORLD BANK
CESISP – at University Milan Bicocca
Adj. Prof. UMN, MSUC, University Southern California, Purdue University
Visiting Professor at China Academy Railway Sciences, Beijing, China
CEO - TRA Consulting

Durban, 15th of October 2019
The FIRST Private HSR in competition - ITALO

Rail reform – The WORLD BANK

CEO of TRA consulting

CESISP- University of Milano Bicocca and China Academy of Railway sciences

Working with main regulators:

ERA in Europe, CNMC in Spain, RSR in South Africa, Etc..
Business model in railways

The most important cost for a railway company is the access charge and when there is a vertical integrated company, the infrastructural cost is the main expense.

The TAC or Train Access charge is the cost that it is paid by the railway undertaking to cover the cost of the infrastructure.

Between Infrastructure manager and RU there are three business models:

- Vertical integration (France, Japan, Hong Kong)
- Vertical separation (Sweden, Uk, Spain)
- Holding structure (Germany, Italy, Austria)
FREIGHT RAIL
Liberalization is not enough

- Efficiency
- Harmonisation & Standardisation
- Coordination
- Innovation
- Fair Conditions
Environmental Externalities

CO₂ Emissions comparison road vs rail in 2014 (g/tkm)

Road transport: 139.8
Railways: 15.6
INTERMODALITY

Road Intermodality

A

RAIL Backbone

B
Seaborne Transport

SELECTED KEY POINT

Vertical integration of the business
Rail backbone
Road distribution from the hub
HSR OPEN ACCESS
COMPETITION
Experience of competition - ITALY

There is the incumbent, a State Owned Enterprise, Ferrovie dello Stato (FSI) that control the Infrastructure Manager (RFI) and the Railway Undertaking (Trenitalia).
Experience of competition

ITALO - Passengers

ITALO - Ebitda Margin
Experience of competition

Specialist subsystems ...

Service-Oriented Architecture (SOA)

.. totally integrated with SOA Architecture.
Experience of competition

Competition in HSR in Italy 2011 - 2018

[Graph showing trends in Demand, Yield, and GDP from 2011 to 2018 (est)]
Competition: and the winner is...

Rome - Milan Modal Share

<table>
<thead>
<tr>
<th>Year</th>
<th>HSR</th>
<th>Air</th>
<th>Road</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>36%</td>
<td>50%</td>
<td>14%</td>
</tr>
<tr>
<td>2012</td>
<td>58%</td>
<td>32%</td>
<td>10%</td>
</tr>
<tr>
<td>2018 (Est)</td>
<td>80%</td>
<td>14%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Legend: HSR, Air, Road
# BENCHMARK ANALYSIS

<table>
<thead>
<tr>
<th>Category</th>
<th>Financial Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Net Maintenance</strong></td>
<td>Total variable expense for Maintenance for station and factory</td>
</tr>
<tr>
<td><strong>Infrastructure charge</strong></td>
<td>Total depreciation for infrastructure, Total interest for infrastructure, Total fixed expense for infrastructure, Maintenance for railroad and signaling for factory and station, Station expense, Police service</td>
</tr>
<tr>
<td><strong>Selling costs</strong></td>
<td>Star ticks expense, Marketing, Benefit, Advertising and Containers</td>
</tr>
<tr>
<td><strong>Running costs</strong></td>
<td>Expense for change and usage of locomotives, Insurance redemption and train accident, Rental fee for locomotives and coaches, Expense for sleeping coach, Stationary and expense at station, Food catering, Controlling cost for Train Operation department, Train Operating cost</td>
</tr>
<tr>
<td><strong>Corporate, Service and support Staff</strong></td>
<td>Total overhead</td>
</tr>
<tr>
<td><strong>Amortisation and depreciation</strong></td>
<td>Total depreciation for train operation</td>
</tr>
<tr>
<td><strong>Interest</strong></td>
<td>Total interest for train operation</td>
</tr>
<tr>
<td><strong>Salary &amp; Staff Cost</strong></td>
<td>Salary, Charges, Compensation, Benefits, Total pension, Per diem, OT, OT holidays for Mechanic department, Cleaning and relating expense for coach/wagon</td>
</tr>
<tr>
<td><strong>Cleaning (Maintenance)</strong></td>
<td>Fuel</td>
</tr>
<tr>
<td><strong>Traction Electricity</strong></td>
<td>Fuel</td>
</tr>
</tbody>
</table>
THANK YOU FOR YOUR ATTENTION

Contact details:
Prof. Dr. Andrea Giuricin
Mob: +393386938369
Email: andrea.giuricin@unimib.it