Track Access Charge and Business Models in rail industry

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Between Infrastructure manager and RU there are three business models:

- Vertical integration (Japan, Hong Kong)
- Vertical separation (Sweden, Uk, Spain)
- Holding structure (Germany, Italy, Austria, France*)
The network of the high-speed is quite triple in a decade in terms of kilometers.

China, with more than 38,000 kms, is the first country in the world for the length of its high-speed network.

Spain is the first country in Europe and the second globally, after China, while France, Germany and Italy are in the 4°, 5° and 6° position globally.
The High-speed lines is developing all around the world in terms of infrastructure.

HSR has evolved rapidly in recent years. Initially the operation of HSRs seemed to be a kind of “superior good”, associated to the levels of high income per capita of some European countries.

China entering that market and showing that a HSR service may function efficiently and profitably also in a developing country changed the perspective.

A number of relatively low-income countries are now proceeding with HSR projects.
Structure of the sector

GOVERNMENT

Holding

RU

Infrastructure Manager

Private Passenger operator

Private Rail freight Undertaking

... USD per TKM

Access Charge

INDEPENDENT AUTHORITY FOR TRANSPORT
Experience of competition: Italy

Intesa San Paolo: 24.5%
Della Valle: 18.0%
Generali: 15.0%
Montezemolo: 14.5%
Punzo: 11.1%
Seragnoli: 6.9%
Bombassei: 5.0%
Cattaneo: 3.5%
SNCF: 1.4%
Sciarrone: 0.1%

GIP → Global Infrastructure Partner
100% in Feb 2018 → 2.5 BLN of USD

2019 → 4.5 BLN USD
2023

GIP III Global Investments
Allianz SPA
in which 10% through AGF Benetux SARL
Reinvesting shareholders
IP Infra Investors LP
Molagers

72.6%
Experience of competition

Competition is the big disruptor in Europe and Italy is the example in Europe for the liberalization.

Spain and France are following the Italian example, but other markets will be opened in the next years.
Experience of competition in HSR

HSR in Italy
(Year base 2011 =100)

Demand  Yield  GDP Italy

Source: Elaboration from data of the companies
Benchmarking

Connection per day

<table>
<thead>
<tr>
<th>Route</th>
<th>Incumbent</th>
<th>New Entrant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milan-Rome</td>
<td>94 (104 before pandemic)</td>
<td>64</td>
</tr>
<tr>
<td>Madrid-Barcelona</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>Paris-Lyon</td>
<td>50 (of which 20 Acela)</td>
<td>10</td>
</tr>
<tr>
<td>New York-Washington</td>
<td>58</td>
<td>0</td>
</tr>
<tr>
<td>Berlin-Munich</td>
<td>38</td>
<td>0</td>
</tr>
<tr>
<td>London-Paris</td>
<td>26</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Companies Data estimation
Competition

Rome - Milan Modal Share

- 2008: HSR 36%, Air 50%, Road 14%
- 2012: HSR 58%, Air 32%, Road 10%
- 2018 (Est): HSR 80%, Air 14%, Road 6%
Intermodal Competition
New entrant

ITALO - Passengers

<table>
<thead>
<tr>
<th>Year</th>
<th>Passengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>6.56</td>
</tr>
<tr>
<td>2015</td>
<td>9.1</td>
</tr>
<tr>
<td>2016</td>
<td>11.1</td>
</tr>
<tr>
<td>2017</td>
<td>12.8</td>
</tr>
<tr>
<td>2018</td>
<td>17.5</td>
</tr>
<tr>
<td>2019 (Est)</td>
<td>20</td>
</tr>
</tbody>
</table>

ITALO - Ebitda Margin

<table>
<thead>
<tr>
<th>Year</th>
<th>Ebitda Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>-2.6%</td>
</tr>
<tr>
<td>2015</td>
<td>15.8%</td>
</tr>
<tr>
<td>2016</td>
<td>26.1%</td>
</tr>
<tr>
<td>2017</td>
<td>34.3%</td>
</tr>
<tr>
<td>2018</td>
<td>34.8%</td>
</tr>
<tr>
<td>2019 (Est)</td>
<td>40.8%</td>
</tr>
</tbody>
</table>
Yield

Yield (euro per 1000 PKM)

Ouigo | Italo* | TGV Sud-Est | TGV Atlantique | AVE | Inoui | TGV Est | TGV Nord | Thalys | JRE
---|---|---|---|---|---|---|---|---|---
51 | 78 | 89 | 98 | 105 | 108 | 117 | 120 | 190 | 195
Competition

Reduction Access Charge (euro per train KM)

<table>
<thead>
<tr>
<th>Period</th>
<th>Markup</th>
<th>Direct Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Until 2013</td>
<td>14.6</td>
<td></td>
</tr>
<tr>
<td>2013-2014</td>
<td>12.3</td>
<td>1.4</td>
</tr>
<tr>
<td>After 2014</td>
<td>6.7</td>
<td>5.3</td>
</tr>
</tbody>
</table>

Mark Up  Direct Cost
Economic regulation

• Benefit in having more traffic is for the Country, not for the private operators

• Access charge is a tool to attract investments

• Access Charge has to be developed taking in consideration the intermodality competition

• SSC (Simple, stable and clear) Regulation
TAC in Europe

Clear role of the:
- State
- Holding
- IM
- RU

Direct costs, mark-up and financial equilibrium of the IM

TOTAL ADMISSIBLE COST of infra management

STATE FUNDS

MARK-UP

DIRECT COST

To be covered by TAC

To be covered by TAC (if the MARKET CAN BEAR)

Mark up could be used by rail company or Government for their development targets of the system.
Striking the right balance in setting the TAC between cost and pricing is key:

- Wear and tear costs to be included in the infrastructure manager’s direct costs;
- The mark-up must be modulated by the ability to pay for the different segments utilising the infrastructure.
Business model in railways

Context:
Total efficient cost is covered by the track access charge. The difference between the total admissible cost of the infrastructure manager and the total efficient cost is given by state subsidies, commercial and other revenues for the IM.

For direct cost there are 3 variables taken in consideration:
- Speed
- Weight
- Traction

The Mark Up part of the Access Charge is driven by the ability/capacity of the different segmented traffic types to pay.
Business model in railways

A

\[ A = A_1 \text{(WEIGHT)} + A_2 \text{(SPEED)} + A_3 \text{(EL.)} \]

Wear & Tear

- 50%  
- 46%  
- 4%  
- 16%

\[ \text{WEIGHT} \begin{array}{c|c|c}
0 - 500 \text{ t} & 0 - 100 \text{ km/h} & \text{Diesel Traction} \\
500 - 1000 \text{ t} & 100 - 150 \text{ km/h} & \text{Electric Traction} \\
1000 - 1500 \text{ t} & \geq 150 \text{ km/h} & \\
>1500 \text{ t} & & \\
\end{array} \]

\[ (T_{A_1} + T_{A_2} + T_{A_3}) \times \text{km} \]

B

\[ B = B_1 \text{(MARKET SEGMENTS)} + B_2 \text{(LINE)} + B_3 \]

Ability to pay

- 100%
- 84%

\[ \text{MARKET SEGMENTS} \begin{array}{c}
\text{Premium} \\
\text{International pass.} \\
\text{Basic} \\
\text{PSO - Long haul} \\
\text{PSO - Regio} \\
\text{Freight} \\
\text{Technical} \\
\end{array} \]

\[ \text{NO LINE} \]

\[ \text{NO TIME WINDOWS} \]

\[ (T_{B_1}) \times \text{km} \]

Ability to pay differentiated on the basis of further pairs added by IM
THANK YOU FOR YOUR ATTENTION

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