Innovation in Sub-Urban and Regional Railway Passenger Transport: the Opening to Competition and new City Tunnel in Leipzig Region

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Outlines

1) Introduction: from Lyon to Leipzig: why looking to Leipzig?

2) Leipzig: city of innovations, especially for transport

3) Regional Passenger Rail transports: Opening to competition
   (evaluation of cost impacts and gain for public authorities and
   feedback from you!)

4) Perspectives - new City Tunnel (2013) - and further researches…
1) Following European Regulation in Railway Regional Passenger Transport: Germany in advance or « on time »!

France delayed … but « process launched »; Regions ready; Public Finance under constraints; France - Germany: lack of reciprocity ;-( !
✓ Interesting to investigate “German case studies” like Leipzig: learning effects
✓ Innovating city…

- Leipzig: first long distance network 1835-1837: LDEC
- Start of “freedom revolution” in for GDR
- Leading innovation during industry revolution
- « Culture-City » today of East Germany (Plagwitz area)
- 2009-2012: competition in passenger regional railway transport
- New 4 km City Tunnel for passenger regional trains to be launched in 2013
« Das deutsche Eisenbahnsystem ist in Leipzig auf die Welt gekommen »
(Haase, p. 212)
FEDERAL LEVEL : German experiences in regional railway transport :

Train.km : +26 % in comparison with 1994 (630 millions train.km)
Pass.km : +55 % in comparison with 1994 (47 millions pass.km)
Federal Subsidies 1996-2009 : - 6 % (in real values)
⇒ For 1 € (in real values), + 37% of transport operations by the Länder
⇒ Costs : 7 billions €/year (Cover around 60 % of the spendings)
⇒ Newcomers : Veolia Transdev ; Netinera ; BeNEX ; AVG ; Keolis,…

And Leipzig Region ?
2) Leipzig Railway Region

- 4000 km² ; 1,7 millions inhabitants 40 km around
- Network : 500 km and 110 stations ; 50 000 passengers/day
- 10 millions trains.km, 345 millions pass.km ; Spending for regional transport for around 100 millions Euros (less than 1% of total SPNV supply in FRG)
- January 2010 – December 2012 : DB Regio and MRB (Veolia)
- Result of introduction of competition : 20 % decrease of public spending : it means + 2 millions train.km/year
- 1er January 2011 : Decision Government of Saxony : saving 10 millions € on regional passenger transport (ar. - 500 000 trains.km for Veolia (MRB) and - 400 000 trains.km for DB )
- January 2013 : new City Tunnel to be opened in city center (Who is building the tunnel ? : DB indirectly ; new contracts : DB)
Methodology:

- Direct contact with transport authority ZVNL: very great welcome
- Discussion with DB Regio / MRB
- Newsgroups discussion « Rail »
- Podium discussion
1st European Intermodal Transport Regulation Forum
Urban Mobility Systems : Regulation Across Modes

Source : technical visit from the author at the invitation of the Ministry of Economy, Labor and Transport from Land Saxony, 4 Mai 2012
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Time savings

<table>
<thead>
<tr>
<th>von</th>
<th>nach</th>
<th>Reisezeit Fahrplan 2006</th>
<th>Reisezeit City-Tunnel</th>
<th>Zeitvorteil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halle</td>
<td>Altenburg</td>
<td>84 min</td>
<td>63 min</td>
<td>21 min</td>
</tr>
<tr>
<td>Eilenburg</td>
<td>Altenburg</td>
<td>87 min</td>
<td>71 min</td>
<td>16 min</td>
</tr>
<tr>
<td>Wurzen</td>
<td>Mittitzer Allee</td>
<td>72 min</td>
<td>62 min</td>
<td>10 min</td>
</tr>
<tr>
<td>Eilenburg</td>
<td>Borna</td>
<td>79 min</td>
<td>64 min</td>
<td>15 min</td>
</tr>
<tr>
<td>Halle</td>
<td>Gaschwitz</td>
<td>69 min</td>
<td>58 min</td>
<td>11 min</td>
</tr>
<tr>
<td>Dölitzsch</td>
<td>Gaschwitz</td>
<td>56 min</td>
<td>35 min</td>
<td>21 min</td>
</tr>
<tr>
<td>Eilenburg</td>
<td>Gaschwitz</td>
<td>55 min</td>
<td>45 min</td>
<td>10 min</td>
</tr>
<tr>
<td>Leipzig Hbf</td>
<td>Altenburg</td>
<td>58 min</td>
<td>46 min</td>
<td>12 min</td>
</tr>
<tr>
<td>Dölitzsch</td>
<td>Altenburg</td>
<td>90 min</td>
<td>77 min</td>
<td>13 min</td>
</tr>
</tbody>
</table>
3) Cost assessments of transport operations in Leipzig Region

<table>
<thead>
<tr>
<th>Traffic</th>
<th>Cost of tracks</th>
<th>Stop in stations</th>
<th>Total</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 – 7 millions trains.km / year</td>
<td>Source: investigation in Leipzig – 2009-2010; discussion and cross check</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table: Evaluation of Operating Costs in Regional Passenger Train in the Leipzig Regio (in million €/year and in % of total)

<table>
<thead>
<tr>
<th>Traffic 2010</th>
<th>Capital Costs</th>
<th>Rolling Stock and maintenance</th>
<th>Energy costs</th>
<th>Employees costs</th>
<th>Overhead costs</th>
<th>Risks and profit</th>
<th>Total</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 - 7 millions train.km / year</td>
<td>20-24</td>
<td>5 - 6</td>
<td>4- 5</td>
<td>5,5 - 6,5</td>
<td>5,5 - 6,5</td>
<td>1,5 - 2,5</td>
<td>41,5 - 50,5</td>
<td>6 - 7 € train.km</td>
</tr>
<tr>
<td>30 %</td>
<td>6-7%</td>
<td>7%</td>
<td>7%</td>
<td>1-3%</td>
<td>Around 55%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: investigation in Leipzig – 2009-2010; discussion and cross check; TOTAL infra + operating: 76,5 – 95,5 millions euro / year, it means around 11 – 13 €/ train.km
### Differentiation variables

- Employees costs (not any more)
- Energy (under investigation – No!)
- Rolling stock material
- Access to financial market
- "Lean management"

**Table: Summary of evaluation of costs and revenues of regional passenger transport in Leipzig region**

<table>
<thead>
<tr>
<th>Year</th>
<th>Operating costs in €/train.km</th>
<th>Infra costs in €/Train.km</th>
<th>Total costs in €/train.km</th>
<th>Revenues in €/train.km</th>
<th>Public subsidies in €/train.km</th>
<th>Traffic in Train.km</th>
<th>Subsidies in €</th>
<th>Benefit from tendering compared with status quo in €/par an</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Discussion and cross check
CONCLUSION : Learning from opening to competition in Leipzig Region :

- Not easy : rolling stock material : bottleneck (See Arriva (before DB) not tendering)
- Newcomer : no information : has to do the counting of passengers on his own ; may change now…
- Costs of train stations : St. 1 (Leipzig) : 39,19 € / stop ; Airport : 19,73 €/stop → 2,22 € / stop… complexe ; not clear
- Complexity of tendering (high expectations of transport authority) : less competition in the future ? Strategic behaviors of DB and newcomers ?
- Leipzig interesting : SERVICES + NEW INFRA. : City tunnel : risk and uncertainty in a long term perspective for the newcomer (train stations costs for instance ; who is building the tunnel ? ; Time of opening ? Long term contract required by the incumbent operator for buying new rolling stock materials compatible with tunnel ?
- AND Budget cut during operation : possible in Sachsen (1 millions Euro = 10 millions train.km on a vote by the Saxony Parliament ! RISK !

- Learning : FRANCE SNCF – TER costs : 16 €/train.km >>>> 11 € train.km (Germany) !
Financement du tunnel de Leipzig, un projet européen (en millions d’euros)
Source : DB AG, 2004, p. 89 ; visite technique le 4 mai 2012

<table>
<thead>
<tr>
<th></th>
<th>Planning prévisionnel</th>
<th>Coût actuel en mai 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>UE EFRE 2001-2006</td>
<td>168,73</td>
<td>224,79</td>
</tr>
<tr>
<td>DB AG (DB Netz und DB Station und Services)</td>
<td>16,36</td>
<td>17,95</td>
</tr>
<tr>
<td>Subventions fédérales (§ 8(1) BSchwAG et § 8 (2) BSchwAG)</td>
<td>114,54</td>
<td>208,30</td>
</tr>
<tr>
<td>Subventions fédérales (Gvfg)</td>
<td>77,20</td>
<td></td>
</tr>
<tr>
<td>Gouvernement de Saxe et Leipzig</td>
<td>194,80</td>
<td>508,70</td>
</tr>
<tr>
<td>TOTAL</td>
<td>571,62</td>
<td>959,75</td>
</tr>
</tbody>
</table>