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# Rolling-Stock : the limits of the business approach for railway operators

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# Rolling-Stock, a liquid asset ?

- **Historically** : one country / one network / one market / one TOC  
=> Rolling stock had not to be liquid, optimisation due to the specification for a single market
- **Today** : this business model does not work anymore in Europe
  - international traffic, TEN-T, need of interoperability
  - competition : risk for TOC to lose a market, need to redeploy quickly its train sets

**→ Rolling stock liquidity  
becomes a major issue in Europe**

# Rolling-Stock, a liquid asset ?

➤ Airplanes are more liquid than trains

<b>Air sector</b>	<b>Rail sector</b>
worldwide market	regional / local markets infrastructure standards
worldwide harmonised safety standards	national type approval (ex : NTV train sets not able to operate in France)
modular constructed airplanes	no harmonised specs between vehicles with expensive refurbishing cost
incentive for regular upgrades (ex: low cost renew their assets every 4/8 years)	long term investment (30 years)
Standardised spare parts and competition between the producers	TOC have to buy spare parts from original manufacturer

# Rolling-Stock, a liquid asset ?

## ➤ Different services offered by TOC

- **Technical criteria** : energy, signalisation, gauge
- **Economic and commercial criteria**
  - How many 1st class / 2nd class seats ?
  - Generous capacity in Paris area, not for “countryside” trains
  - Coaching stock dedicated to night services (couchette)
- **Political criteria** : Local PTA want their own train designs (issue for the second hand market)

## ➤ Higher liquidity for Freight sector

- Internationally interoperable rolling stocks
- Less specific freight locomotives
- Easier market entrance
- Efficient second hand market and rent / leasing market

# Rolling-Stock, a liquid asset ?

## ➤ Key conditions for a better passenger rolling stock liquidity

- **Need for interoperability :**
  - **Infra :** ....but only when it is necessary because infrastructure modifications are costly and cross-border trains are more expensive (between 25% and 30%).
  - **Technical norms :** Many opportunities to reduce national specs : door opening systems, fire fighting appliances, exhaust pipes, toilets ...
  - **Approval process :** a single European certification
- **Need for modular trains :** arbitrate between immediate and lifecycle costs
- **Need for standardisation :** big volumes reduce the unit cost and the fixed engineering cost



In France,  
the exhaust pipe  
is on the side



And in Germany,  
in the middle



# Matching between rolling-stock lifecycle and railway passenger market

Investment in rolling stock decided by TOC

Open access (France, Germany, Italy)  
and Some Regional TOC

French Regional trains /  
Some German Länder./ etc

Rolling stock owned  
and financed by the  
TOC

Rolling stock bought by the TOC  
and financed through mechanisms  
developped by the PTA in order to  
reduce risk and cost, such as  
subsidy, bank guarantee, long term  
contracts,...

Rolling stock owned by a  
ROSCO and leased to  
the TOC

Rolling stock owned and  
financed by a PTA then  
provided to the TOC

UK passenger franchises

Some German Länder

Decision to invest in rolling stock not taken by TOC



Cost supported by TOC

Reduced Cost for TOC



# Matching between rolling-stock lifecycle and railway passenger market

## ➤ Franchised market : no silver bullet

- **Long term contracts** => no competition / incentive for TOC
- **Take-back guarantee** : if there is a guarantee, PTA cannot renew the rolling stock for each contract. If there is no guarantee, all the risk and cost are borne by the TOC (ex : German Länder)
- **No rolling-stock conditions in the contract** : TOC has the possibility to bring new or second-hand market rolling stock
- **PTA decides of the rolling stock** : TOC missions only those of a train carrier and implies that PTA has the knowledge to make the technical specs



# Matching between rolling-stock lifecycle and railway passenger market

➤ Open market : high risks borne by the TOC

- **Gap between lifecycle of rolling stock and knowledge of the passenger market**
  - Economic framework : level of track access charges, energy prices, passenger demand....
  - Intermodal competition conditions
  - Capacity to adapt services
- **Question of the optimal duration of operational life**
  - Is there a model for shorter life assets with lower purchasing and maintenance cost?
- **Risk of lack of visibility**
  - Over-investment in rolling stock : bankruptcy risk
  - Under-investment in rolling stock : reduction of the offer and/or price increase for the customer
  - SNCF was forced to **write off TGV assets** due to the insufficient profitability of our stock of TGV trains (-€700M in 2011 and -€1400M in 2013).

# Matching between rolling-stock lifecycle and railway passenger market

## ➤ Which responsibility for the TOC on rolling stock to optimise its operations ?

- Reduce the number of types of vehicles
- Optimise train specs for customers' needs and infrastructure requirements (e.g. platform length and height, acceleration and braking performance)
- Arbitrate : extending life / refurbishing of existing fleets / buying new asset
- Optimise the use of the depot, maintenance and production

## ➤ Who takes the risks ?

- Financial risk : TOC and PTA are saddled with debt
- Which guarantee for the residual value of the rolling stock
- Risk associated with the introduction of new rolling stock onto the network

➔ *SNCF is in favour of a business model which keeps the ability for TOC to provide an integrated system knowledge including train set decision and maintenance*

# Conclusion

- The direct purchasing by PTA remains the less expensive financial mechanism. Innovative financing mechanisms are an answer to shrinking budgets, They do not reduce the rolling stock costs
- TOC must keep their ability to make their own decisions about and train set specs and maintenance
- A sufficient ROCE is necessary to decide in new rolling stock assets : Only way to guarantee sustainable investment, real efficient second hand market and fair competition between TOC