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OF RAILWAYS

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High Speed – KPI & Benchmarking

Results of a UIC study

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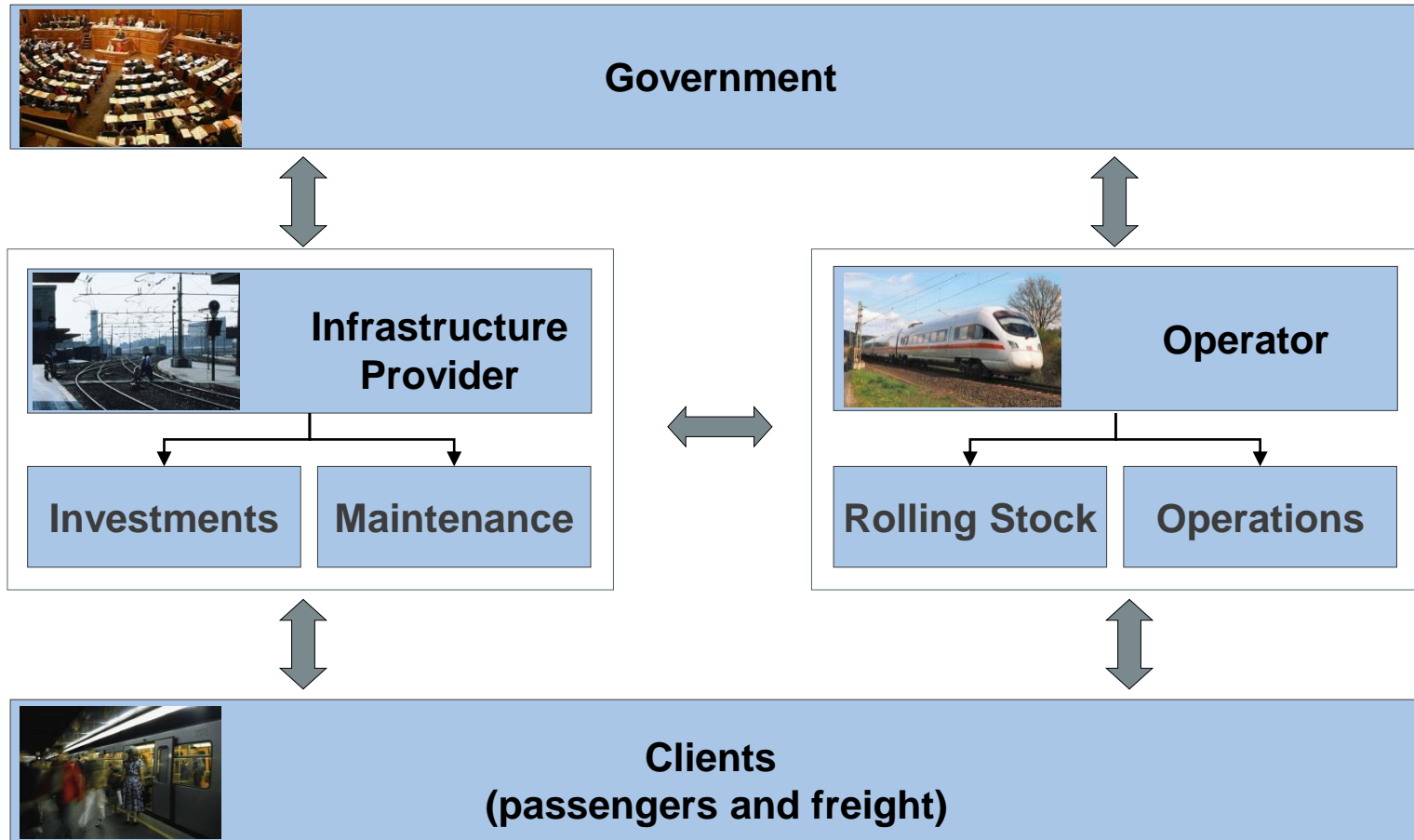
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Background of the project

- > **Survey on KPIs used in High Speed and benchmarking**
- > **Initiated by the High Speed Committee of UIC**
- > **Focus on three key questions:**
 - What is measured?
 - What KPIs are used to measure?
 - Which KPIs could be useful for an international benchmarking?
- > **Input from 7 Asian and European railways**
- > **Covers train operators and infrastructure managers**

The need to manage cost and performance



... and what should be measured



Finance

Provide a self-sustainable railway



Reliability

Ensure an appropriate level of reliability of technology in use



Safety

Provide a safe transport service and environment



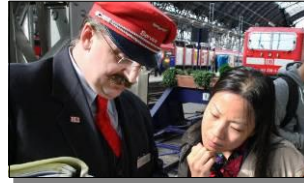
Utilisation

Best exploit the capacity of existing assets



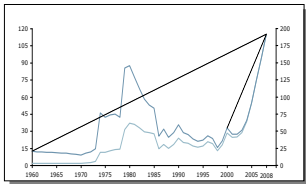
Quality

Deliver on-time and high quality transport services



Staff

Create a safe and motivating working environment



Efficiency

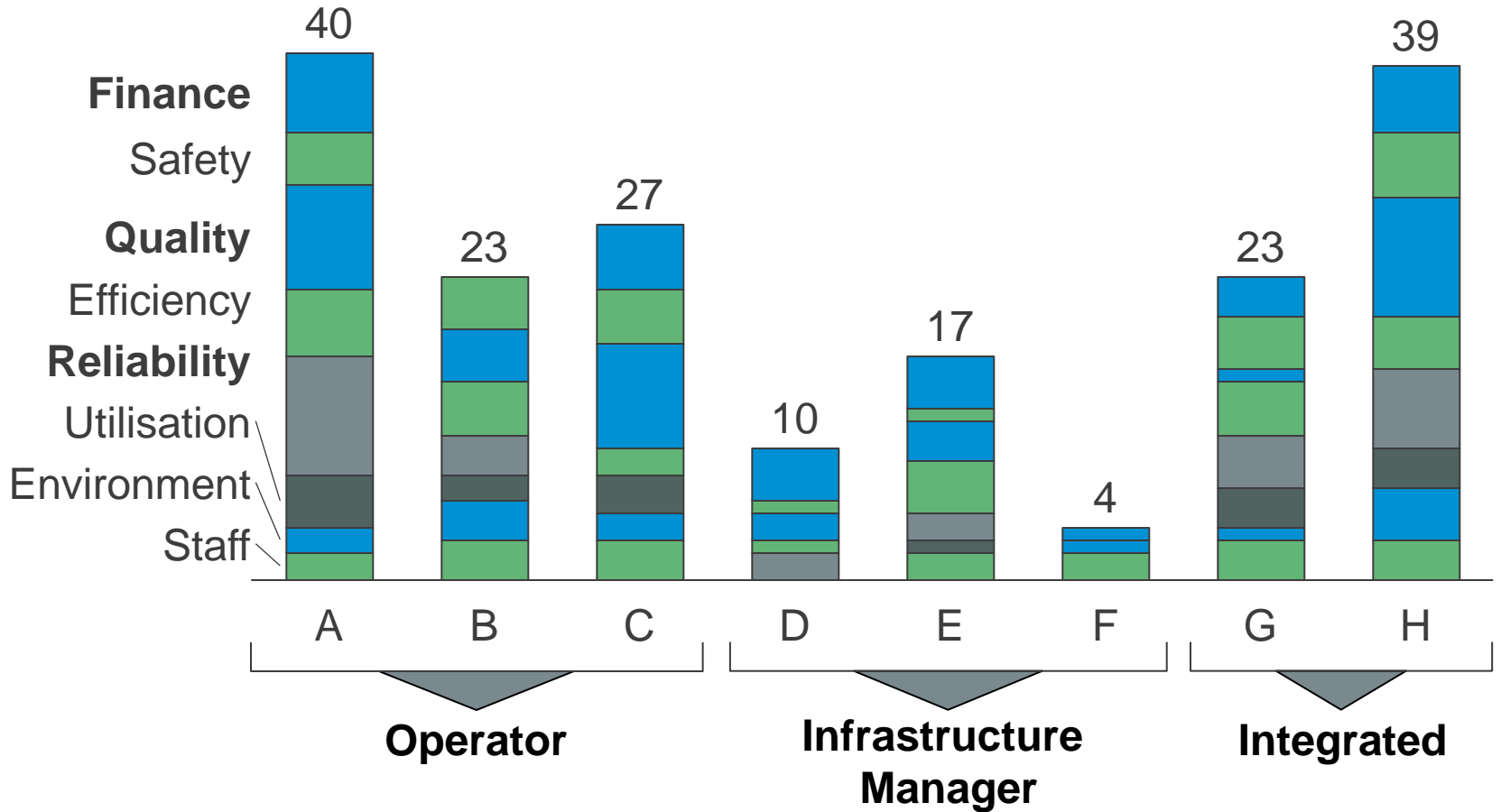
Improve productivity



Environment

Produce environmentally friendly, low emission services

Focus is on finance, quality and reliability



> Focus is on finance, quality and reliability

Benchmarked KPIs

KPI category	TOC	INT	IM
Structural data¹⁾	<ul style="list-style-type: none"> > Train frequency > Train utilisation > Capacity utilisation 		<ul style="list-style-type: none"> > Train frequency > Track / switch density > Infrastructure utilisation
Finance	<ul style="list-style-type: none"> > Revenue to cost-ratio > Cost per train-/ pax-/ seat-km 		<ul style="list-style-type: none"> > Cost per track-km > (Revenues per train-km)
Efficiency	<ul style="list-style-type: none"> > Staff hours per train-km 		<ul style="list-style-type: none"> > --
Quality	<ul style="list-style-type: none"> > Punctuality > Travel speed 		<ul style="list-style-type: none"> > Speed restrictions
Reliability	<ul style="list-style-type: none"> > Train related failures/ MDBF > Cancelled service hours 		<ul style="list-style-type: none"> > MTBF > Cancelled service hours
Safety	<ul style="list-style-type: none"> > Accidents per year > Derailments per year 		<ul style="list-style-type: none"> > --

1) Network, trains, utilisation, supply & demand

Benchmarking needs a robust methodology

Phase 1: Set-up

- Commitment of participants
- Agreement on KPIs
- Definition of KPIs
- Comparability/methodology

Phase 2: Data collection

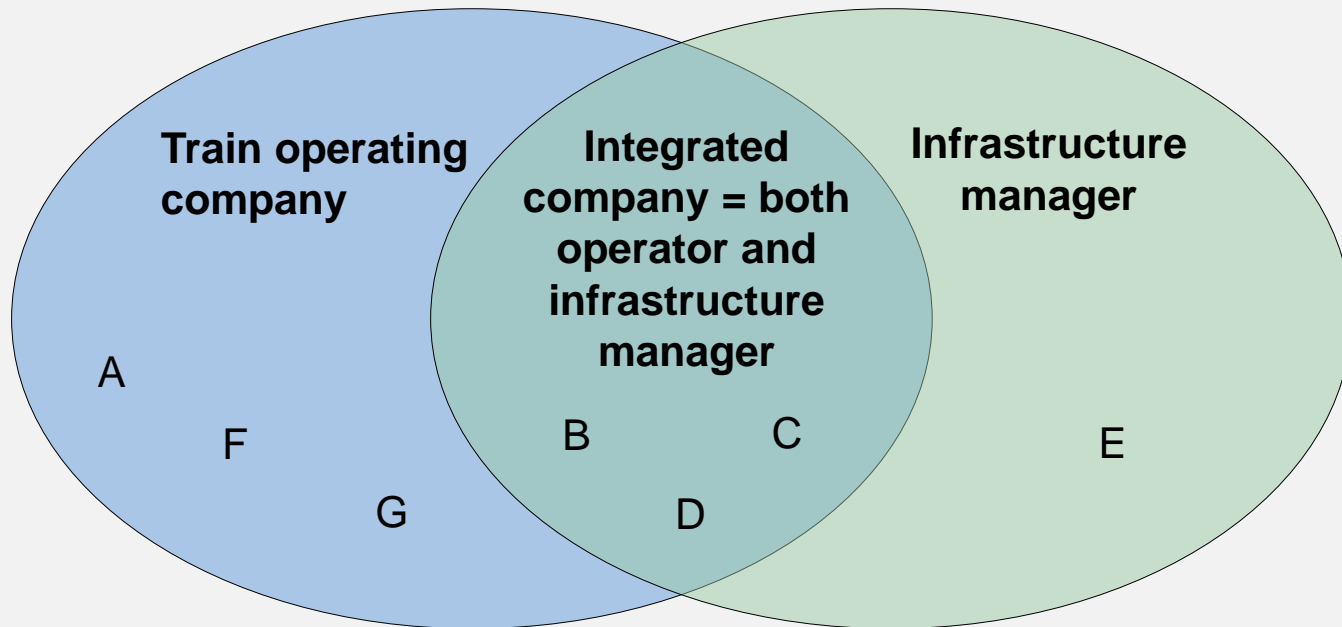
- Collection of data from peers
- Validation and quality assurance

Phase 3: Evaluation

- Normalisation
- Analyses and feedback
- Reporting & presentation

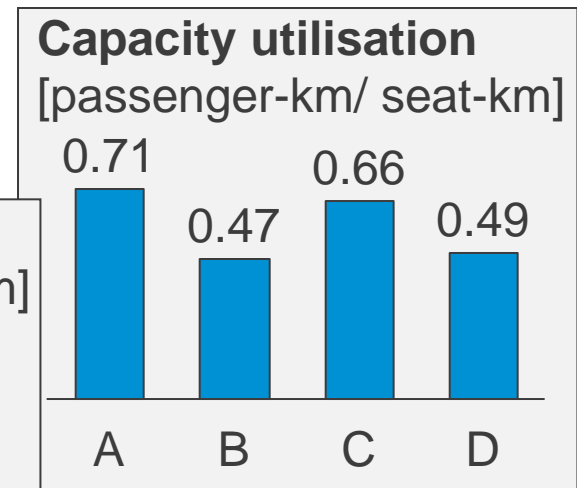
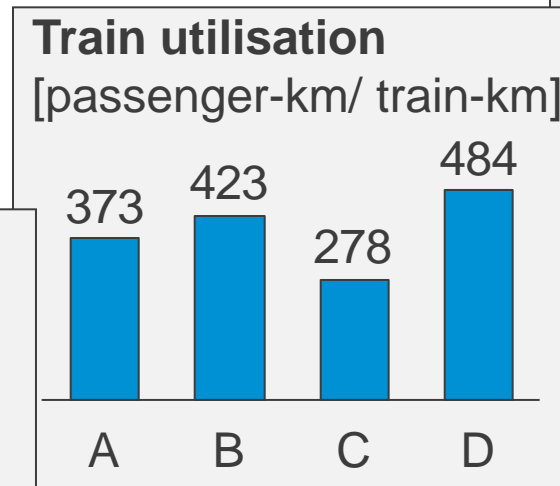
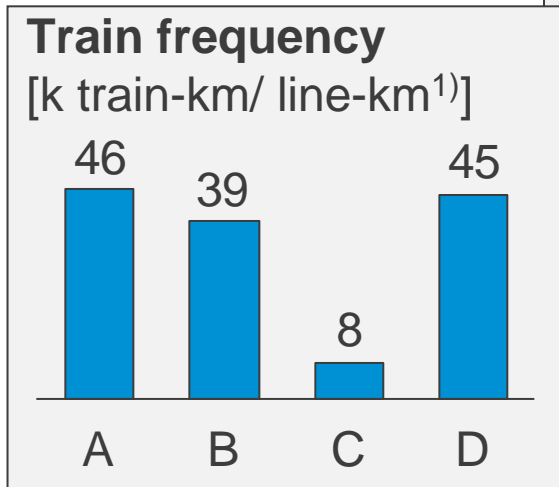
In total The peer group consists of 7 companies

Overview on participants



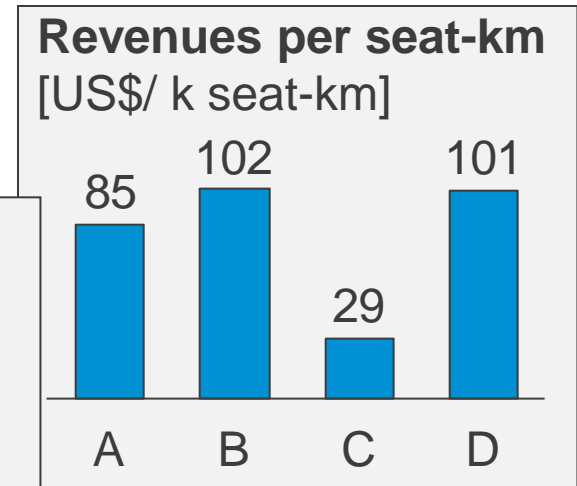
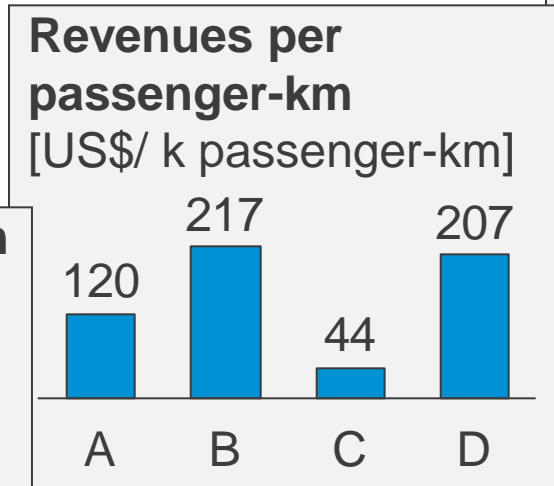
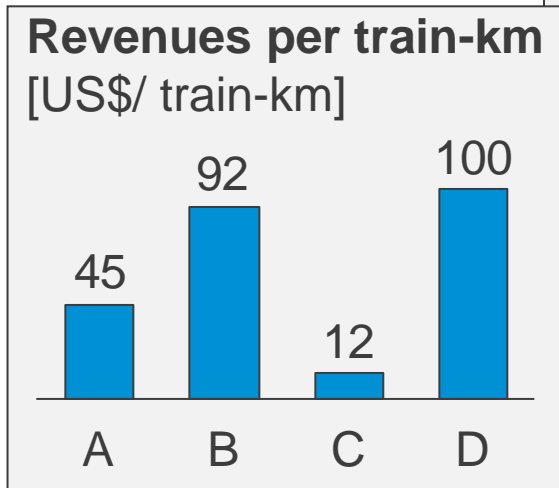
- Data is mainly relating to high speed services with speed above 250 km/h

Performance related data cover utilisation of trains and networks

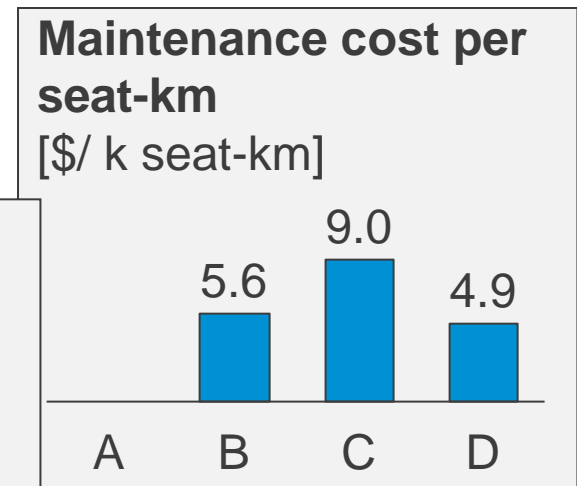
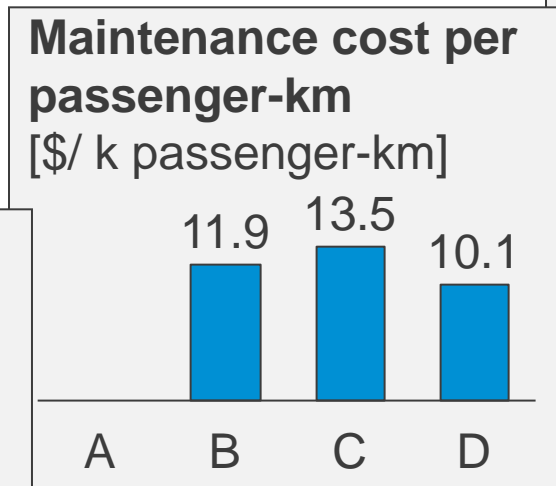
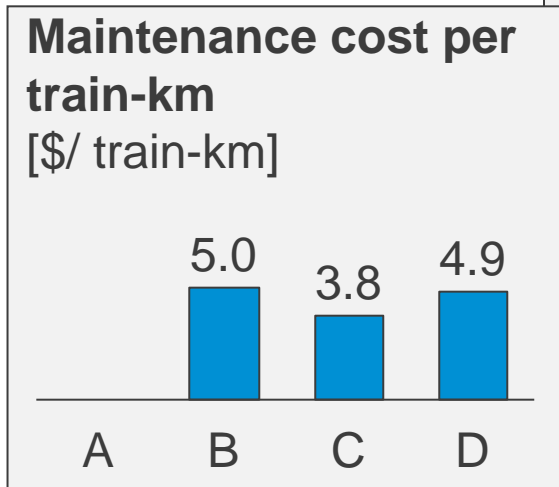


1) Line-km provided by IM

Farebox revenues will be used to demonstrate the degree of cost coverage



Total cost are not available, so focus is on maintenance cost



The benefits of benchmarking

- Show own position in an international context
- Identify trends over time
- Promote critical questioning
- Regularly monitor results
- Provide a basis for target setting
- Have a basis for negotiation and funding
- Launch initial steps for improvement

Conclusion

- **Complex contractual relationships require measurement**
- **Objectives to be measured cover numerous areas**
- **Infrastructure managers and operators use a number of KPIs**
- **There is a focus on finance, quality and reliability**
- **Based on these insights an international benchmarking exercise has been started**

■ ■ ■ Thank you for your attention

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