



INTERNATIONAL UNION
OF RAILWAYS

unity, solidarity, universality

Managing Performance and Cost Information

Benefiting from Existing Experience and Tools

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Asset Management Seminar

Daejeon, October 7th, 2011

Agenda

- **Why benchmarking?**
- Lasting Infrastructure Cost Benchmarking
- High Speed Benchmarking

Western Europe's annual spend on existing networks is around Euro 16 bn

Peer group

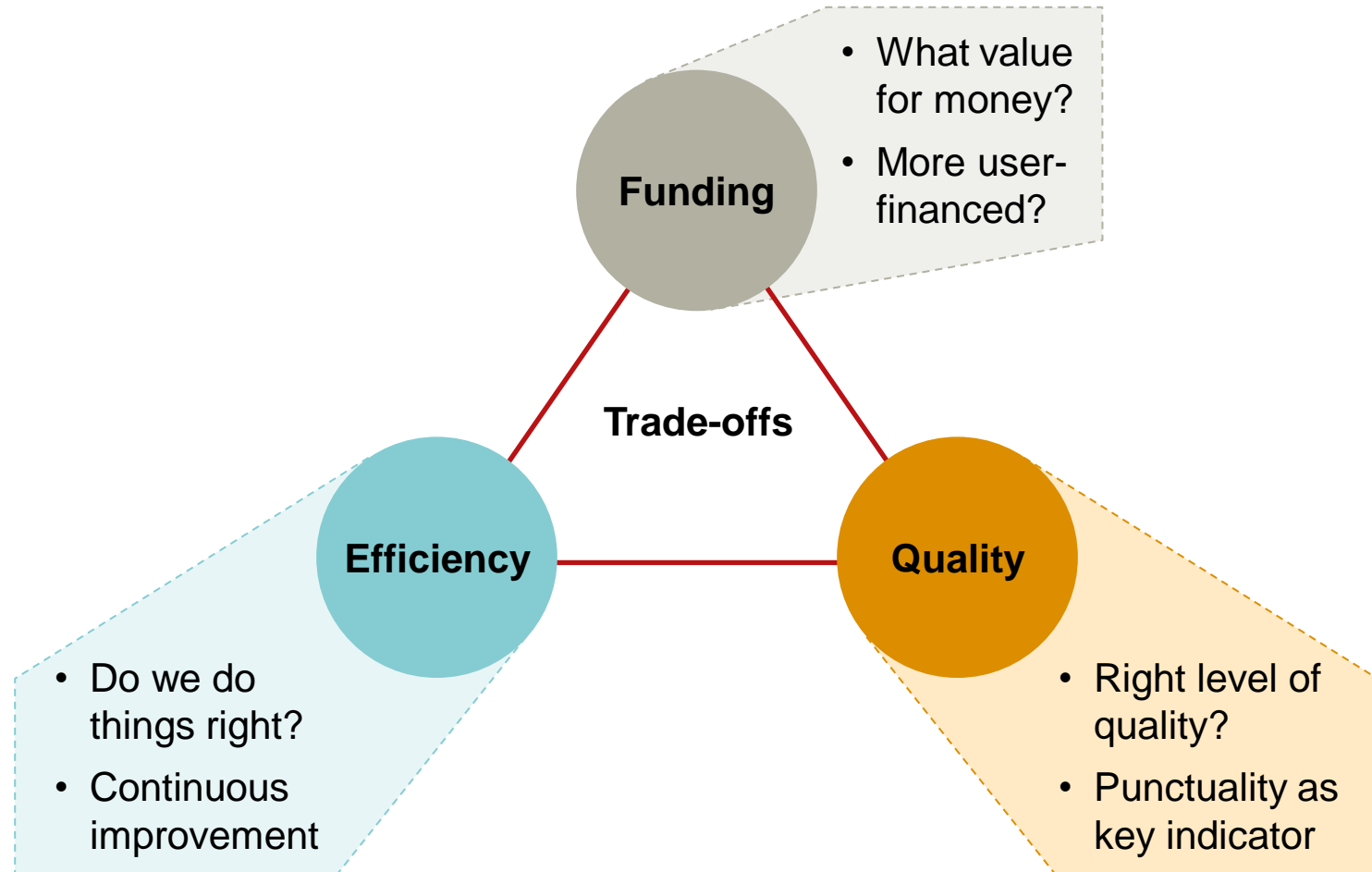
Annual totals

- 225,000 main track-km
- 2,600 million passenger train-km
- 640 million freight train-km
- Euro 7,500 million maintenance
- Euro 8,000 million renewal



In Europe we face an ongoing debate about the value created by these budgets

Railway performance



These demands lead to a number of strategic objectives for most railways

Strategic objectives



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



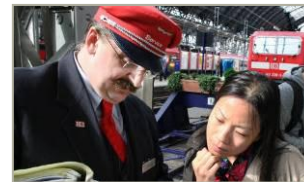
Utilisation

Best exploit the capacity of existing assets



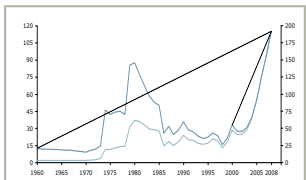
Quality

Deliver on-time and high quality transport services



Staff

Create a safe and motivating working environment



Efficiency

Improve productivity

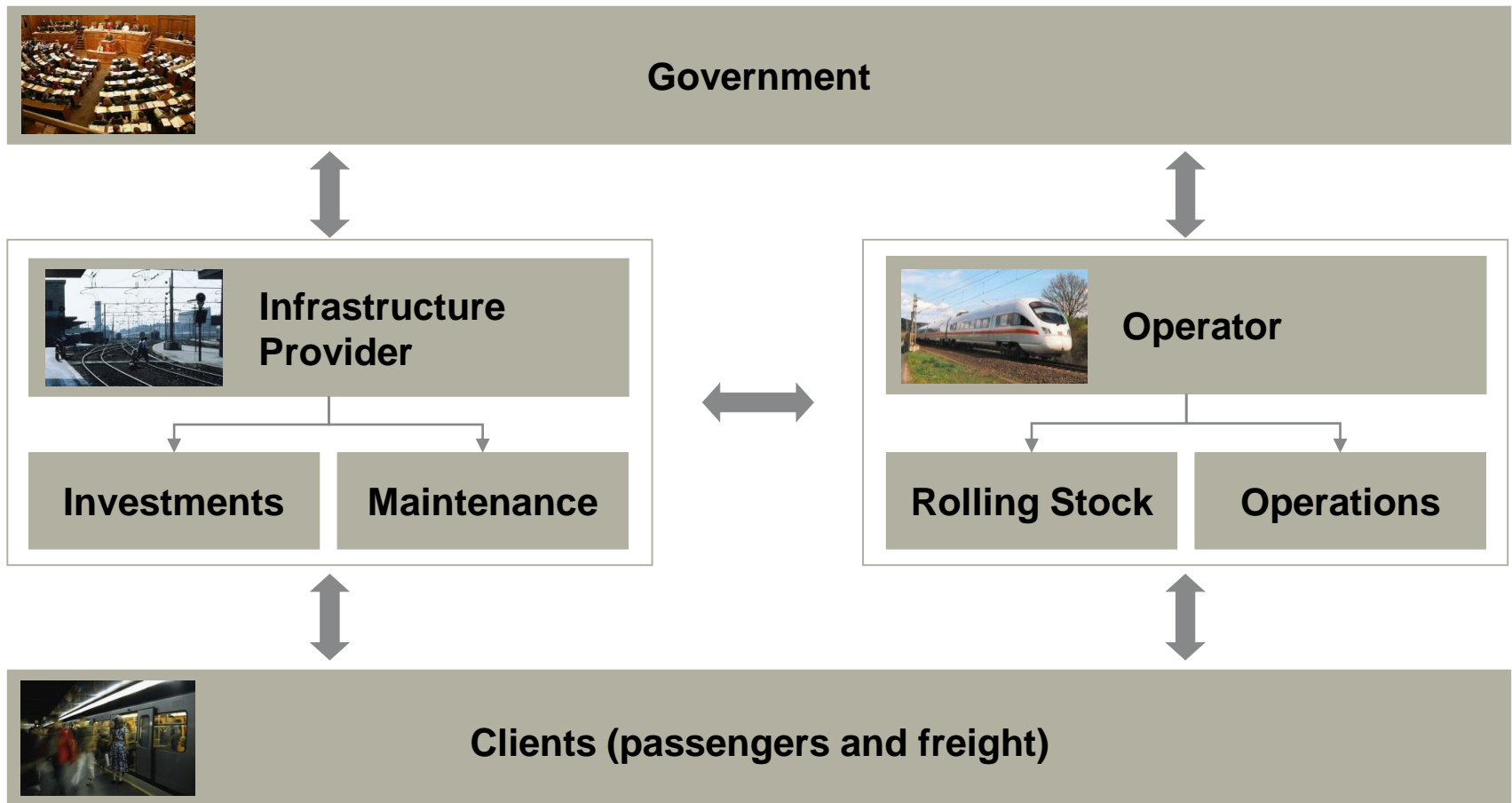


Environment

Produce environmentally friendly, low emission services

Today's market structures result in complex contractual relationships between players

Relations between parties



Indicators are needed to measure the achievement of objectives and contractual performance

Indicators

Finance	Safety	Service quality	Efficiency	Asset utilisation	Reliability
Revenue-to-cost ratio	Accidents	Punctuality	Passenger per train kilometre	Kilometre per railcar	MTBF ¹⁾ of assets
Cost per kilometre	Derailments	Travel speed	Personnel hour per train km	Operating time per rail car	MDBF ¹⁾ of rolling stock
Revenue per kilometre	Natural catastrophies	Train frequencies	Operating time per employee	Train km per route kilometre	Age of assets
...	...	Cleanliness	Maintenance reserve
			

In partially monopolistic and regulated markets benchmarking has been an appropriate means to ...

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

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- High Speed Benchmarking

LICB is benchmarking very different European railway networks for more than 15 years

Network characteristics

9.700 train-km / track-km
94 % single track
0,3 switches / track-km
63 % electrified track



34.400 train-km / track-km
41 % single track
1,1 switches / track-km
100 % electrified track

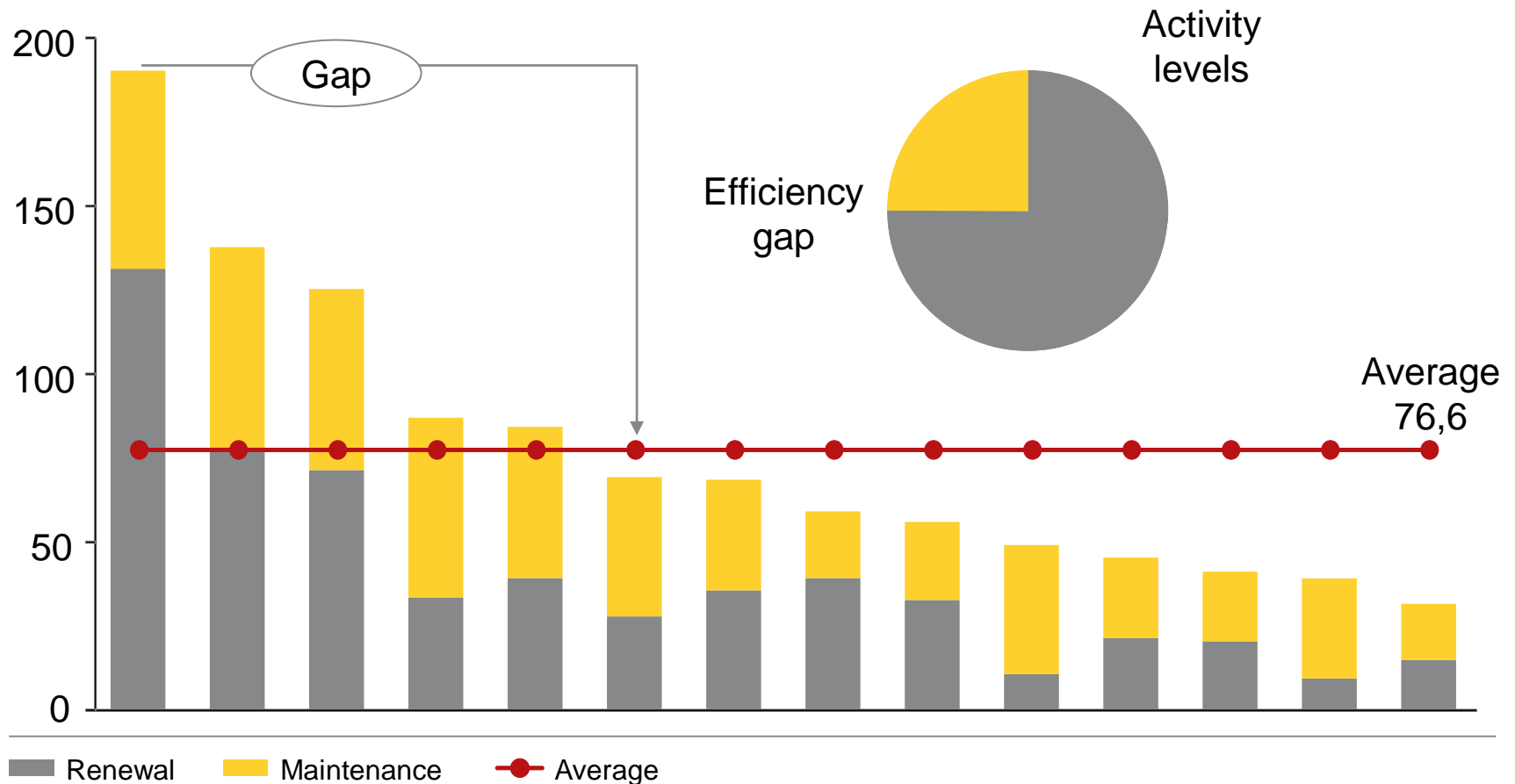


Source: LICB, year 2009

After accounting for structural differences the comparison provokes further questions

Annual maintenance and renewal expenditures, fully normalised

EUR 1.000 / main track-km

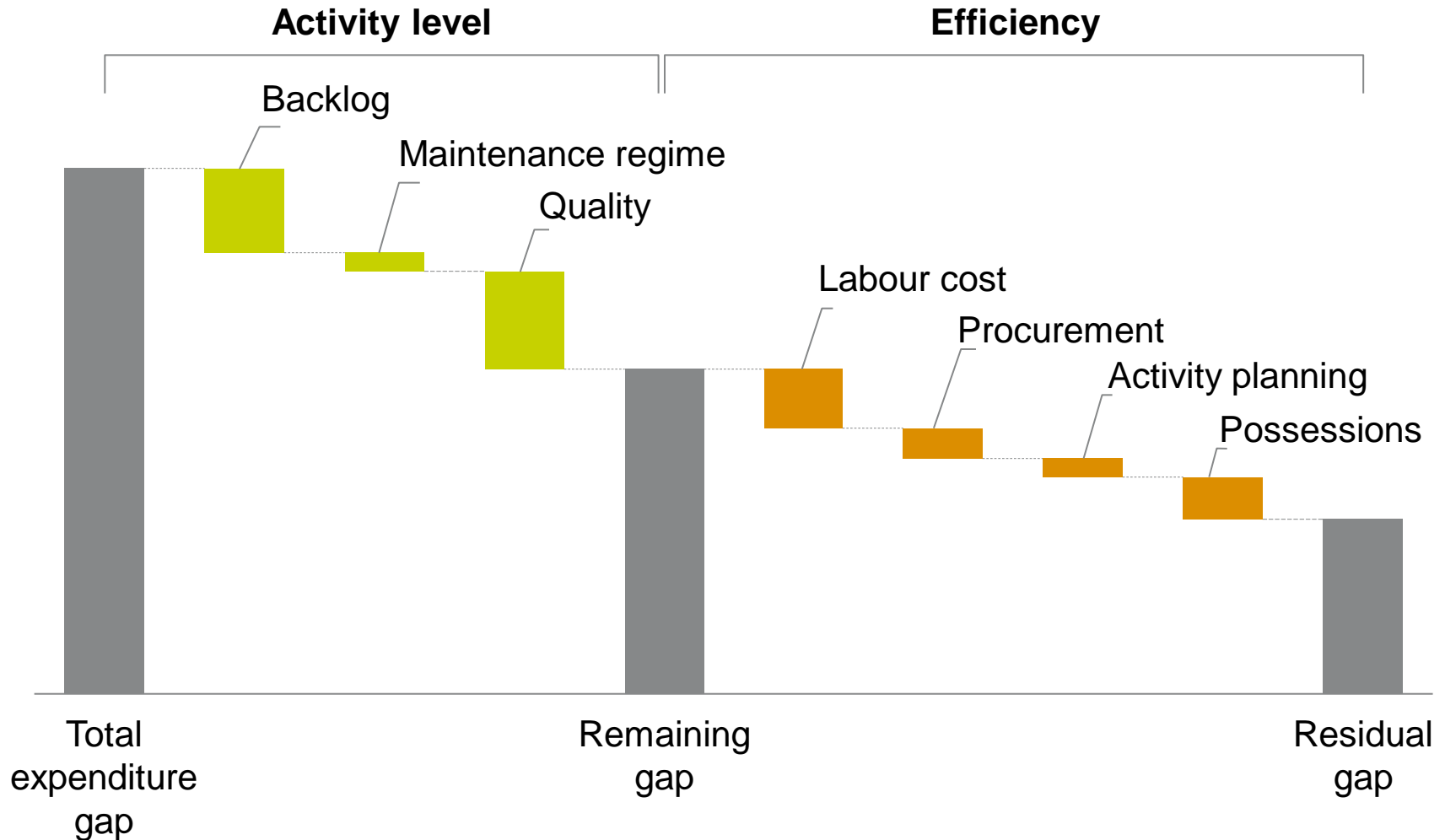


Source: LICB, year 2009

A gap analysis can support the identification of root causes

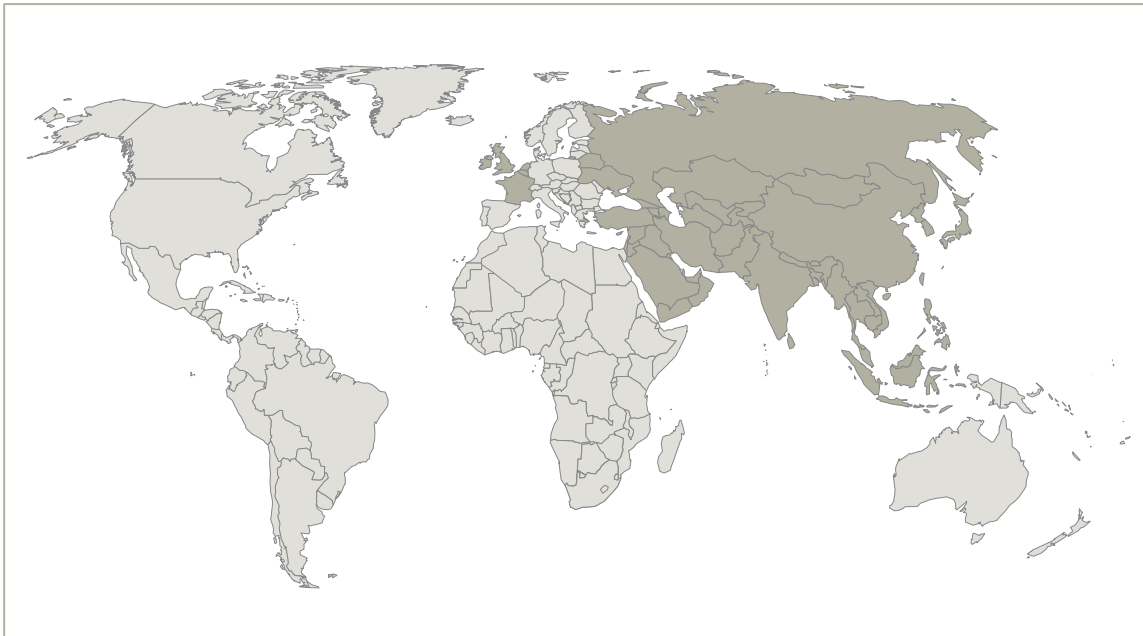
Root causes

EXAMPLE



LICB is facing three major developments – one is its regional expansion

Peer group

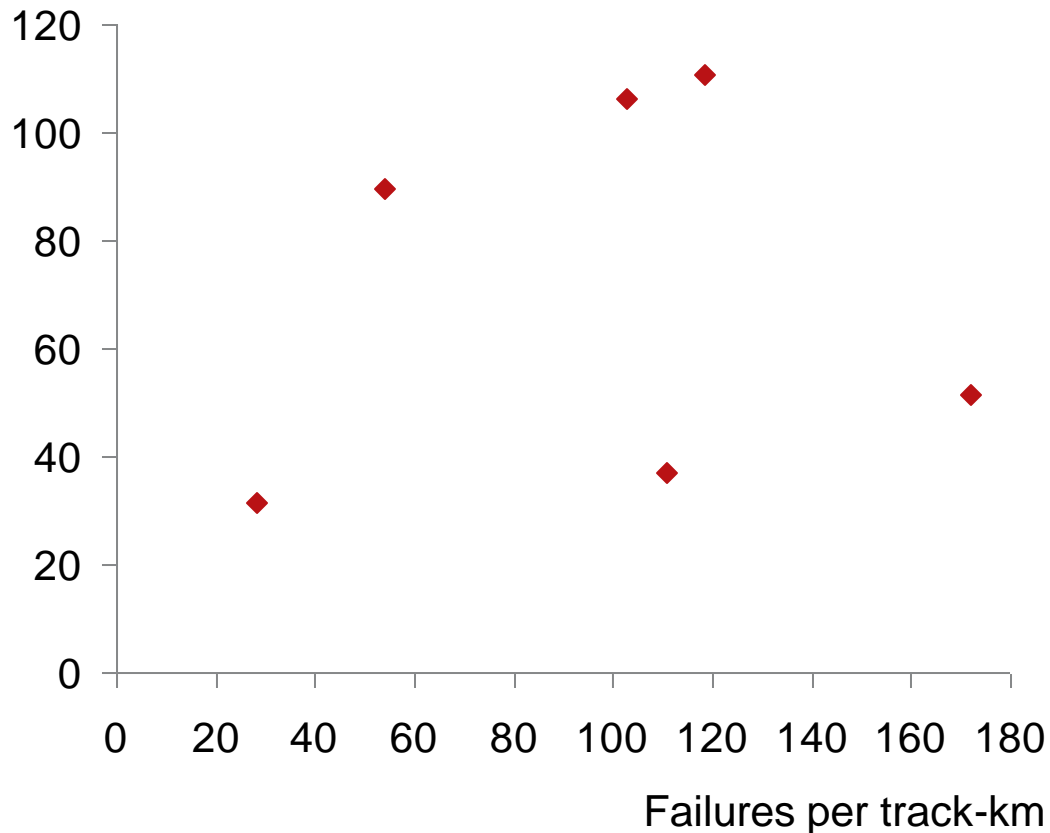


- Currently 15 Western European railways
- Extension to Central Eastern Europe
- Further expansion possible and welcome

The scope of LICB is going to be extended by performance related indicators

Scope

Cost per track-km



Today:

- Network characteristics
- Utilisation
- Cost

Future:

- Quality
- Safety

Recently a web-based application has been introduced

LICBweb



- Web-based application
- All data stored at UIC
- Administration by UIC
- Easy data entry and processing
- Flexible benchmarking algorithms
- Standard reporting and data export
- Regional benchmarking

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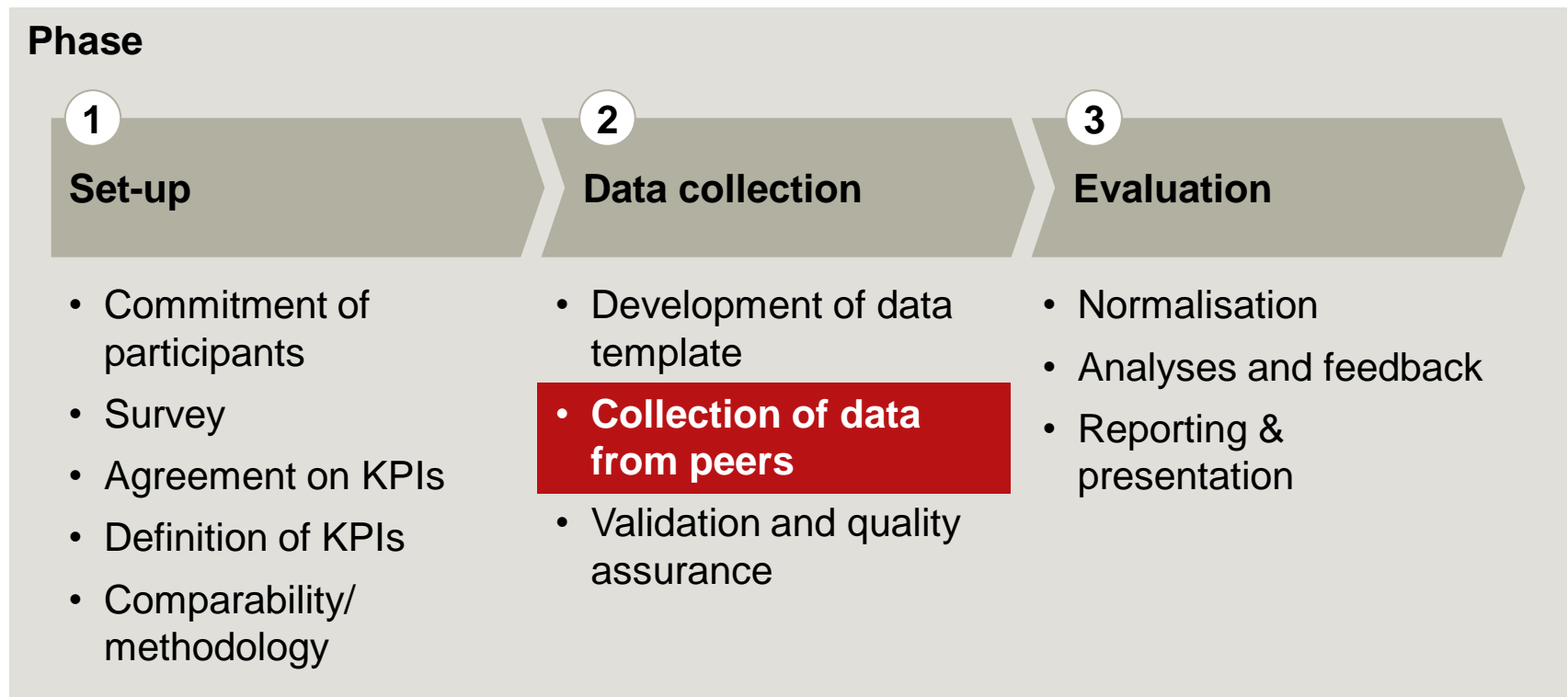
UIC started an international high speed benchmarking

Background

- Survey on KPIs used in High Speed
- 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

Phase 2 has just begun

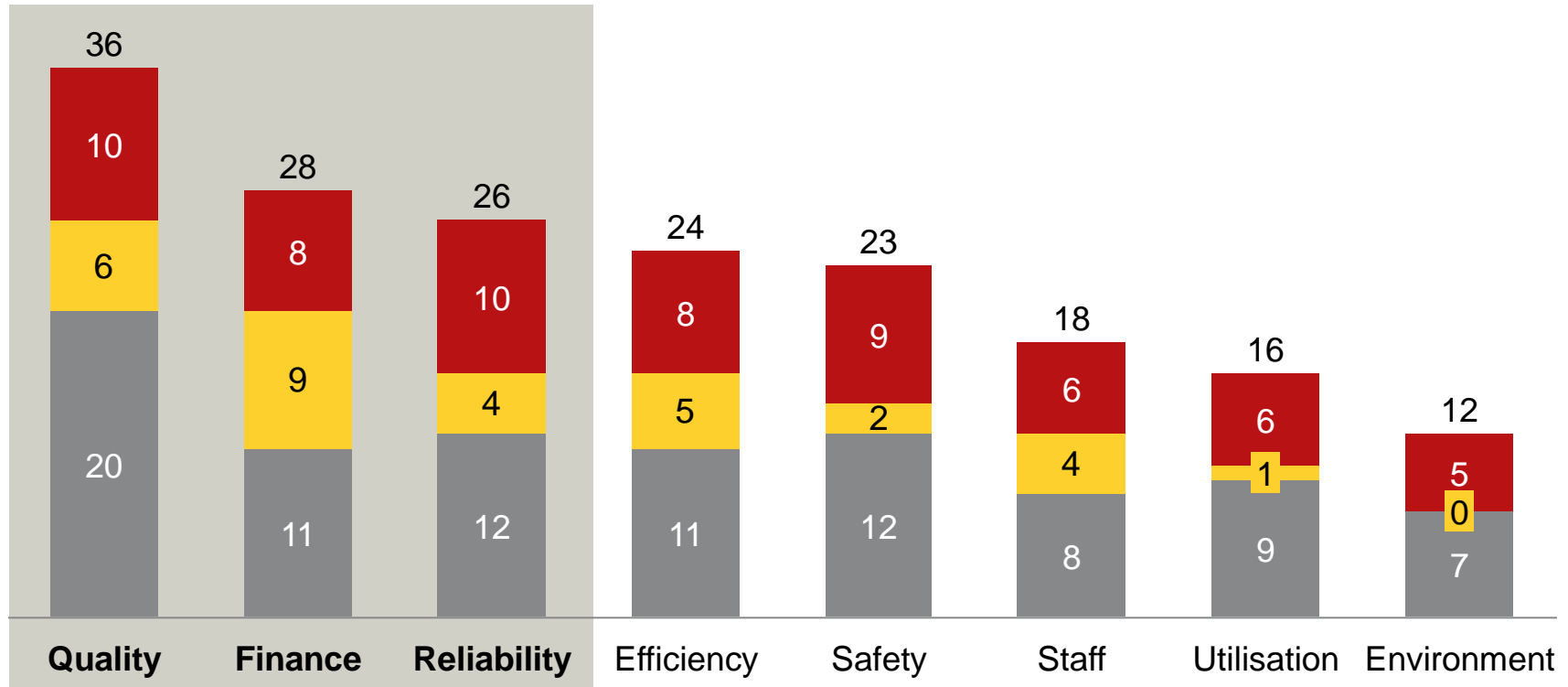
Approach



According to our survey focus is on quality, finance and reliability

Survey

Points



- Integrated railway: TCDD, EJR
- Infrastructure manager: ADIF, RFI, Infrabel
- Train operator: VR, Trenitalia, Korail

The benchmarking will produce a number of key performance indicators

Indicators

Finance

- Cost / train-km
- Cost / track-km
- Farebox revenues / train-km

Quality

- Average travel speed
- Services cancelled
- Punctuality

Reliability

- Failures / train-km
- Failures / track-km
- Temporary speed restrictions

Basic Data

- Length of lines
- Fixed assets
- Trains / train-sets

Utilisation

- Train-km / track-km
- Passengers / train-km

LICB is a very good basis for future international benchmarking activities

Resumé

- The debate about cost and performance is challenging most European infrastructure managers to provide more "value for money"
- Comprehensive sets of strategic objectives and contractual relationships in the industry require measurements to demonstrate progress
- Benchmarking has proven to be a useful concept to create transparency about the individual position of an infrastructure manager
- Using it as a starting point it has provoked further investigation and led to numerous opportunities
- LICB is a well established approach to compare infrastructure cost throughout Europe and is open to be extended
- The high speed benchmarking is UIC's latest initiative to apply a similar approach to the high speed sector

■ ■ ■ Thank you for your kind attention

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