Key Performance Indicators in Railways - Who measures what?

Contact:
Victor Vaugoin (victor.vaugoin@oebb.at)
Key Performance Indicators - how to define and measure performance for Infrastructure Managers

- Credible, measureable, relevant metrics to measure achievement
- What factors are critical for a specific capability to be exploited?
- Body of Knowledge

KPIs

Critical Success Factors

Best Practices, Standards, Patterns
Improving performance

- Identify trends & progress
- Facilitating understanding of cause-and-effect relationship
- Assessment of measures and changes in strategy
Going beyond mere performance

- Explaining the situation to stakeholders
- Better project predictability
- Setting target cost levels
In designing KPI-systems organizations must consider how the measure will support

- Employee performance review
- Organizational planning, organizational health
- How the measures will support daily operations and decision making
Key Issues

Input

Efficiency, Rentability, Productivity

Processes

Effectiveness, Upgrade / Renewal

Output

Demography, Staff Satisfaction, Salary, Employer Attractiveness

Customer Satisfaction, Performance, Capacity, Quality
Key Issues II

Measuring Success

Specific: Vision & Strategy  →  Measurable: Success Dimensions  →  Achievable: Critical Success Factors  →  Relevant: Entities to compare  →  Time-phased

Creating Success

Take Action, monitor, recalibrate → Set goals & action plans → Identify best practice → Eliminate impact of exog. conditions → Analyse reasons for difference
KPIs and their relevant success dimensions for IMs

- **Asset Utilisation**
  - Train km per track km

- **Efficiency**
  - Planned track possession km
  - Per track possession km hour

- **Safety**
  - Accidental equivalent fatalities per train km

- **Service Quality & Reliability**
  - Trains delayed due to infrastructure

- **Financial Effectiveness**
  - Lifecycle cost/ gross hauled ton

- **Accessibility**
  - Service coverage

- **Innovation and Growth**
  - Average relative age of assets
Variety of Performance Measures

- Performance and costs of railway systems vary
- Network characteristics and organization models very different from country to country

RNE-/ PRIME Approach

- Overall harmonization difficult to achieve
- Advisable to ensure a certain degree of harmonization
Key characteristics for IM benchmarking

- Balanced: covers all dimensions, not just cost and reliability
- Progressive: Search for best practices
- Multi-faceted: performance and process benchmarking are both needed
- Practical: achieve transferable and implementable results
- Useful: work towards comparability
- Customized: IMs need system specifically tailored to their needs
Conclusions

Definition of measurements heterogeneous (delay minutes, side tracks)
Lighthouse indicators not suited for comparison. To promote development opportunities benchmarks of selected KPIs could be useful

• Meaningful conclusions only in medium-to-long-term (3 yrs+)
• Integrated view financials/quality important for planning

Density of usage needs to be taken into account
Strategy processes and operations must be closely linked

• Key Performance Indicators already are part of everyday business für RUs & IMs, but
• Limited Comparability
Recommendations

- KPIs can help railway companies to become more attractive for their customers and more efficient in their operations
- It would be appropriate to standardize and harmonize data to improve quality and comparability
- Introduce KPI for „regulatory burden“
- Give preference to market- or company-driven initiatives: Healthy competition leads to innovation
- No hard-law-approach, no shaming, no finger-pointing

- In the railway business, words are words, explanations are explanations, promises are promises, but only performance is reality!
- Therefore the most decisive KPI: Markt Share!
Cargo Perspective: KPIs to steer cost and quality of rail service on the Rail Freight Corridors

- Infrastructure costs for a typical mix of freight trains
- Customer Satisfaction according to current regulation
- End-to-end journey time
- Spare capacity given into the market for extra trains
- Coordination of infrastructure works across borders

- End-to-end punctuality
- Dispatching effectiveness domestically and cross border
- Age of network subdivided in asset groups
- Availability of market oriented rail infrastructure
- Technical reliability and time to failure for infrastructure components

- Operations

- Cost & Customer Satisfaction

- Planning

- Construction
The Cargo Perspective - Multiple Layers, Poor Harmonization

- TEN-T KPIs (all modes – 9 corridors)
- Rail specific
- RFC level
  - RFC1
  - RFC2 ...
- Traffic performance management working groups
  - RFC1, 2: ok
  - other RFCs: not known

Definition of IM specific KPIs

Definition of RU relevant KPIs

RNE harmonisation

RU Dialogue

Working group on KPIs

RU involvement?