



People's Republic of China  
Poverty Reduction and  
Regional Cooperation Fund

## 4th Railway Working Group Meeting

22–24 April 2019 | Tashkent, Uzbekistan

4-е заседание Рабочей группы по  
железнодорожному транспорту

22–24 апреля 2019 г. | Ташкент, Узбекистан

# Case Study: Revitalization of regional rail passenger services

## Udo Sauerbrey



- How to implement sustainable and competitive passenger transport on rail?
  - Reliability and Service Quality
  - Economies / Sustainability
  - Efficiency
  - Market orientation / Innovation

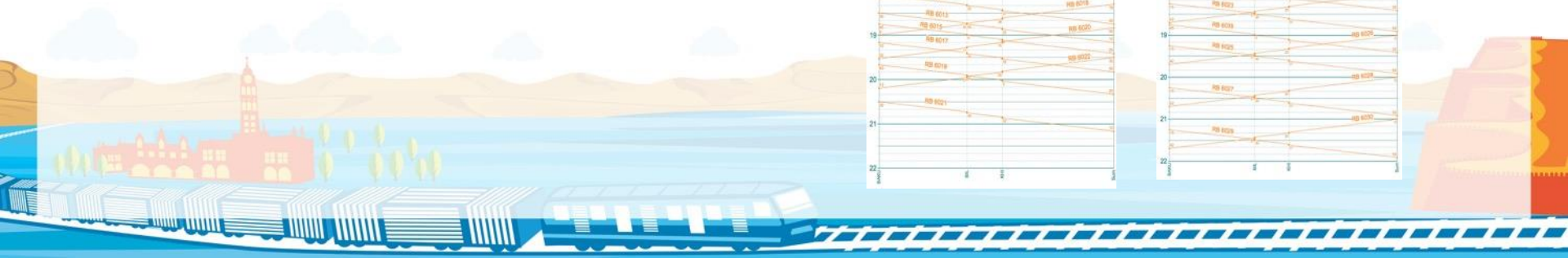
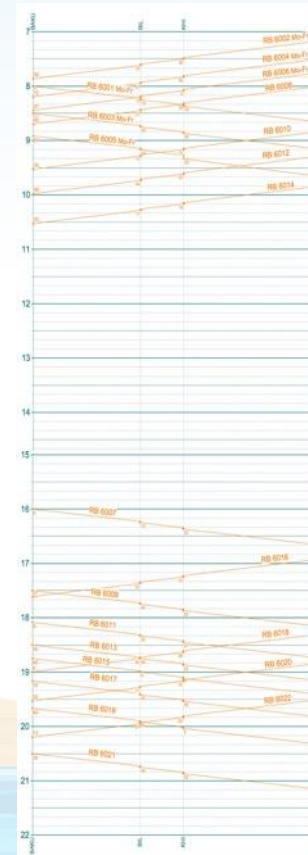


- Reliability and Service Quality
  - Punctuality
  - Asset reliability
  - Customer satisfaction





- Reliability and Service Quality
  - Scheduled and frequent traffic



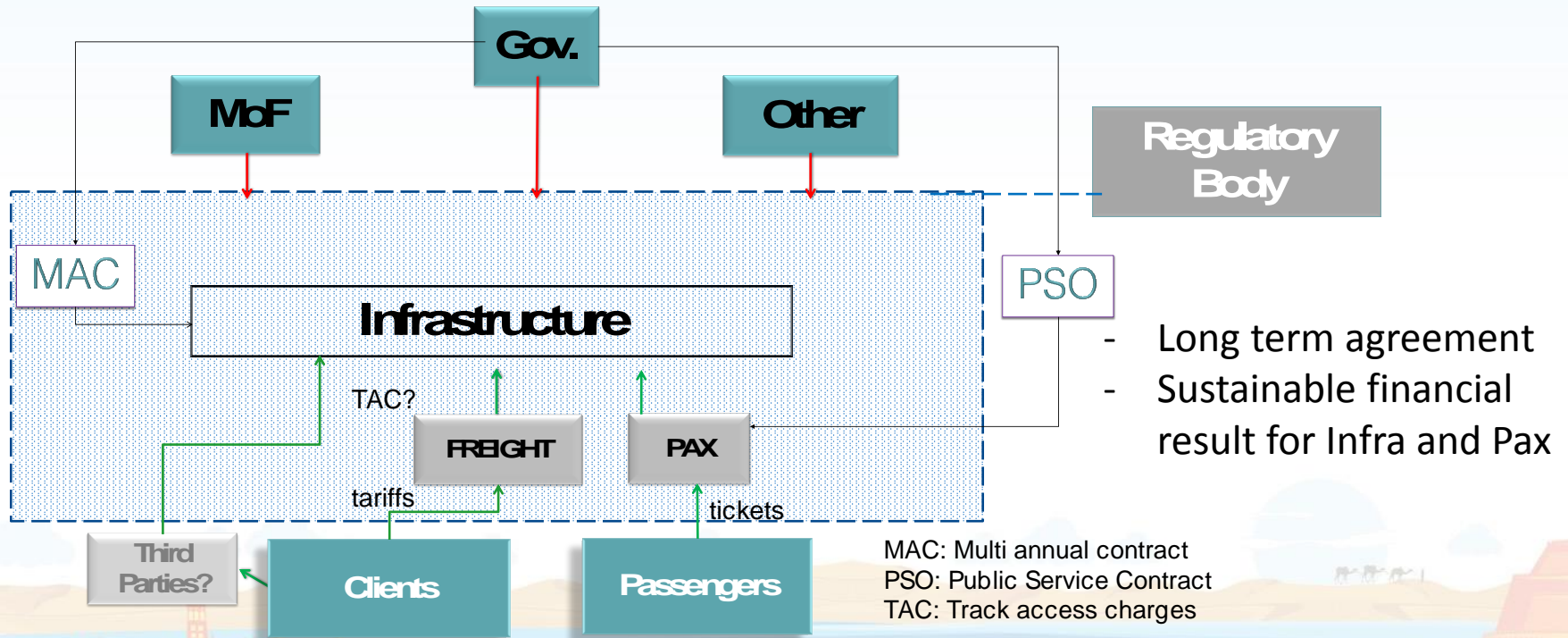
- Reliability and Service Quality
  - Communicate offer quality
  - Register failures and restrictions
  - Calculate asset utilization
  - Offer easy access and additional services



- Economies / Sustainability
  - Subsidy structures
  - Cost Control
  - Pricing
  - Asset maintenance
  - Investment decisions



- Economies / Sustainability
  - PSO/MAC implementation in Europe





- Economies / Sustainability
  - PSO as Basis for all services
  - “Government buys services for people”
  - Railway contracts performance





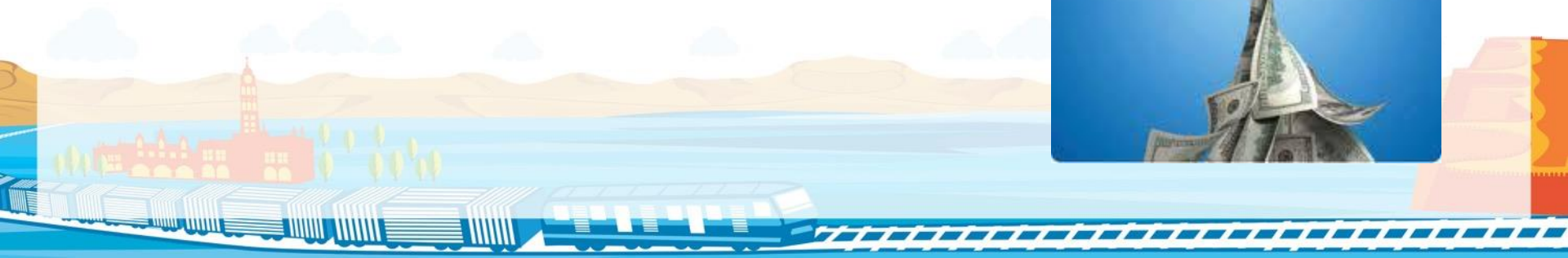
- Economies / Sustainability
  - PSO cover about 50% of German public transport costs
  - Many different types of contracts (risks regarding ticket sales, assets etc.)



# • Economies / Sustainability

## – PSO provides:

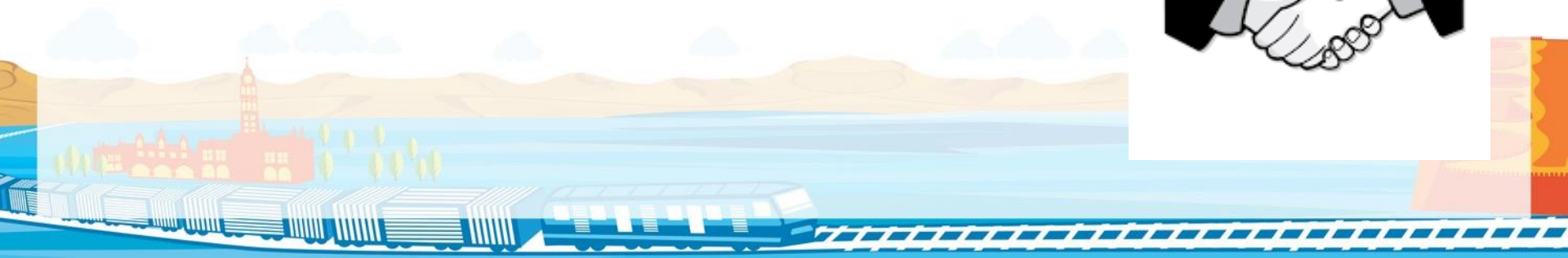
- quality of rolling stock by covering maintenance costs on long term
- frequency for less peak times and areas
- Sustainable revenue stream for railways



## • Economies / Sustainability

### – PSO requires:

- Commitment of railways for certain minimum standards
- Government willingness to provide rail services
- Coordinated investment decisions



## • Economies / Sustainability

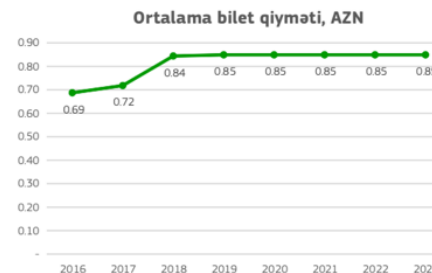
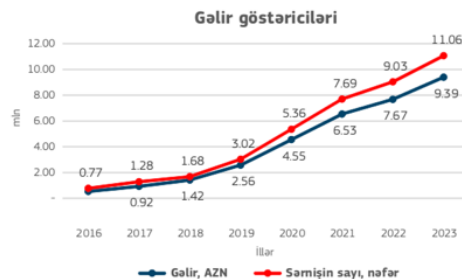
– PSO requires planned commitment (Example!  
Numbers not valid)

Bakı-Sumqayıt və Dairəvi Xətt üzrə əldə olunan və  
proqnoz edilən Gəlirlər



		2016	2017	2018 *	2019	2020	2021	2022	2023
Gəlir	mln. AZN	0.53	0.92	1.42	2.56	4.55	6.53	7.67	9.39
Səmişin sayı	mln. nəfər	0.77	1.28	1.68	3.02	5.36	7.69	9.03	11.06
Ortalama bilet qiyməti	AZN	0.69	0.72	0.84	0.85	0.85	0.85	0.85	0.85

\*Qeyd: 2018-ci ilin ilk 10 ayı faktiki göstəricilər, son 2 ayı isə proqnoz əsasında hesablanmışdır.



- Plan of future development of traffic, of service costs and ticket price

Revenues  
No of pass.  
Avrg. Ticket price

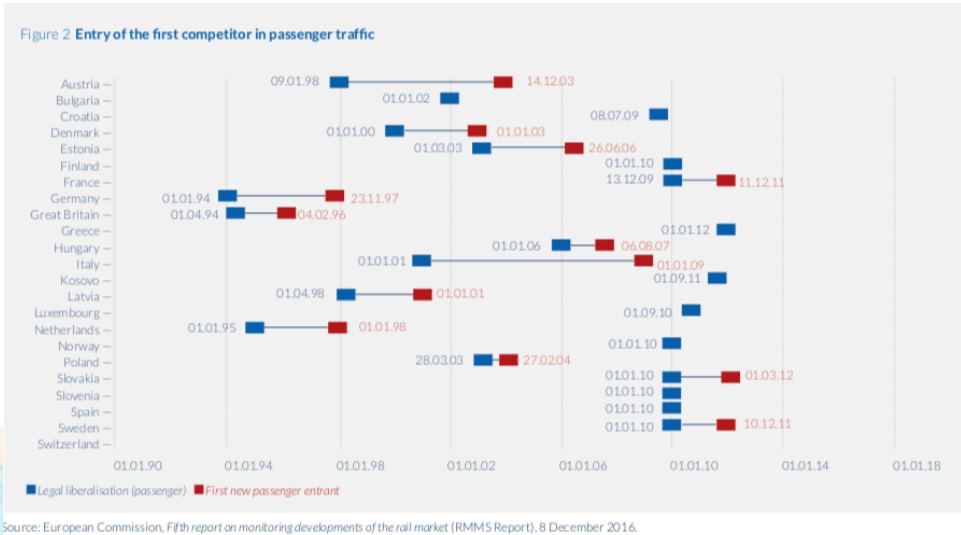
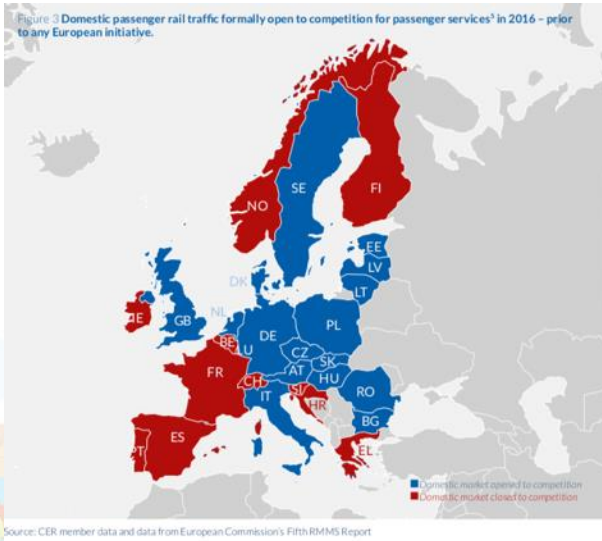




- Economies / Sustainability
  - Cost calculation local train services

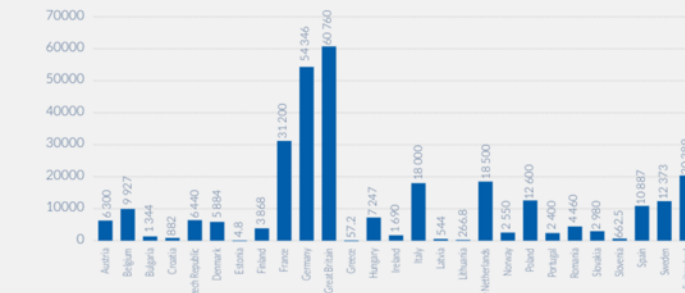
Manat	Total cost 11 trips p.a.	Costs per Train-km (11)	Total costs 17 trips p.a.	Costs per train-km (17)
Depreciation rolling stock	4.036.667	12,74	4.036.667	8,24
Maintenance costs	256.608	0,81	396.576	0,81
Personnel costs	125.244	0,40	131.208	0,27
Energy costs	115.790	0,37	178.949	0,37
Cleaning costs	98.405	0,31	124.730	0,25
Marketing/Sales costs	347.454	1,10	365.110	0,75
Overhead costs	747.025	2,36	784.986	1,60
Total costs	5.727.193	18,08	6.018.225	12,29
Overhead headquarters & security	411.842	1,30	411.842	1,30
Total costs	6.139.035	19,38	6.430.067	13,59
Revenue	767.578	2,4	1.006.000	2,1
Result	-5.371.457	-15,7	-5.012.225	-10,24

- Economies / Sustainability
  - The Funding Requirement is INDEPENDENT of the operator
  - Private operators are considered to be cheaper



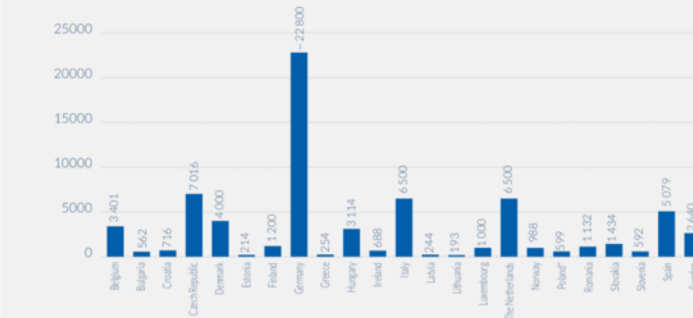
- Economies / Sustainability
  - Almost all regional passenger trains in Europe are under PSO

Figure 5 Scope of national and regional PSO in terms of million passenger-kilometres operated in each country concerned (2015/2016)



Data not available for Luxembourg

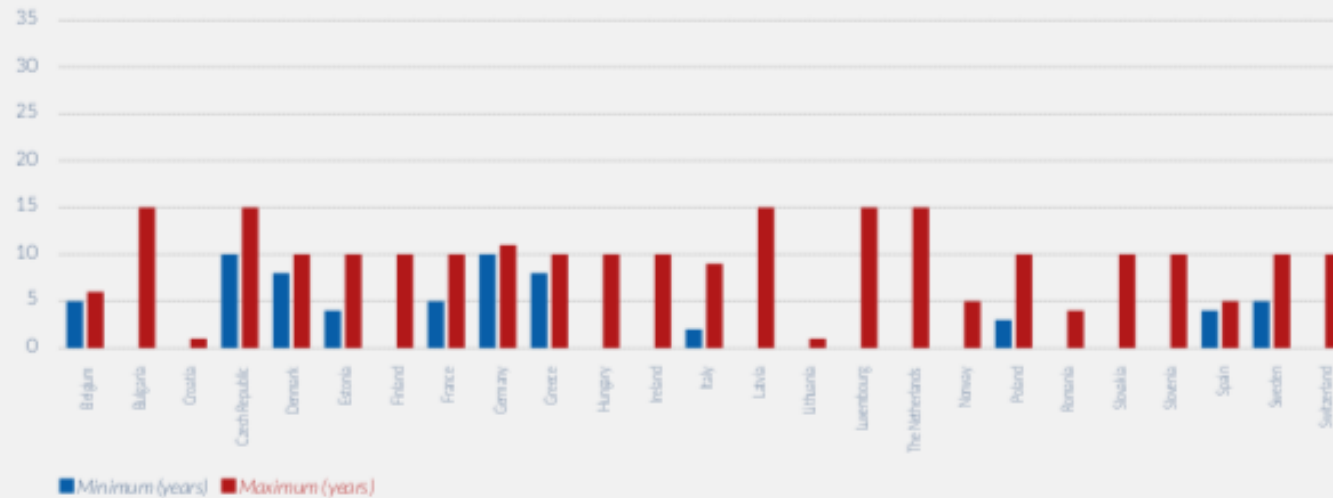
Figure 6 Scope of national and regional PSO in terms of trains operated per day in each country concerned (2015/2016)



\* Figure for PKP Group only  
Data not available for Austria, France, Great Britain, Portugal and Switzerland

- Economies / Sustainability
  - The “long term” contract creates Sustainability !

Figure 11 Overview of PSO contract duration throughout the EU



No provisions made regarding contract duration in Portugal

Data not available for Austria and Great Britain



- Economies / Sustainability
  - KPI are part of the contract (punctuality, cancellations, customer satisfaction)
  - “Bonus / Malus” can be agreed upon depending on contract type
  - Investments need to be part of the contract



# • Economies / Sustainability

## – Example: Contract KPI from Ireland (DART)

### Schedule B: Performance Obligations

Performance obligation	Reporting Arrangement	Compliance test	Performance Related Payment
<b>Punctuality<sup>†*</sup></b> <b>Intercity:</b> (Dublin- Belfast, Dublin – Galway, Dublin – Rosslare, Dublin – Cork, Dublin – Westport/ Ballina, Dublin – Sligo, Dublin – Limerick, Dublin – Tralee, Dublin – Waterford): 90% of all InterCity services to arrive at their final destination on time or up to and including 10 minutes of their scheduled time. Punctuality performance measure is an aggregate of Intercity services	Quarterly Report to Authority by line including year to date position.	Minimum of 90%	*
<b>Punctuality<sup>†*</sup></b> <b>DART</b> <b>Morning Peak:</b> Arrivals in City Centre Monday to Friday: 90% of all DART services due to arrive in Connolly Station between 07:00 and 10:00 to arrive on time or up to and including 10 minutes of their scheduled time. <b>Evening Peak:</b> Departures from City Centre Monday to Friday: 90% of all services due to depart Connolly Station between 16:00 and 19:00 to arrive at their final destination on time or up to and including 10 minutes of their scheduled time. <b>Off peak:</b> 87% of <u>all</u> DART services to arrive at their final destination station on time or up to and including <u>5 minutes</u> of their scheduled time.	Quarterly Report to Authority including year to date position	Minimum of 90%          90%          87%	*

<sup>†</sup> Subject to Clause 17 Force Majeure and planned possessions

<sup>\*</sup> the punctuality performance measure is the rolling annual average punctuality for the 12 months up to the end of the quarter

<sup>\*</sup> Subject to Clause 17 Force Majeure and planned possessions

- Economies / Sustainability
  - Cost monitoring
  - Agreed ticket price structures
  - Service units (maintenance, stations, cleaning etc.) as Business Units
  - Infrastructure costs to be defined in advance
  - Investments with clear economic target



- Economies / Sustainability
  - KPI “Cockpit” for Management

Financial View	Operating View	Customer View	Commercial View
Revenues/costs (monthly basis)	Train/km performed	Passengers/ Freight transported	Revenues per Ton/Passenger
Costs per train/km	Km per unit/asset	Number of clients in freight	Revenues per Ton/km Pax/km
Costs per ton-km/ pax-km	Tons/tkm/Pax/Pkm per year	Punctuality	Revenues per Seat-km / wagon
Costs per ton per passenger	Trips per year	Travelers satisfaction	Revenues per Line
Costs per operating hour	Assets required		Revenues per staff



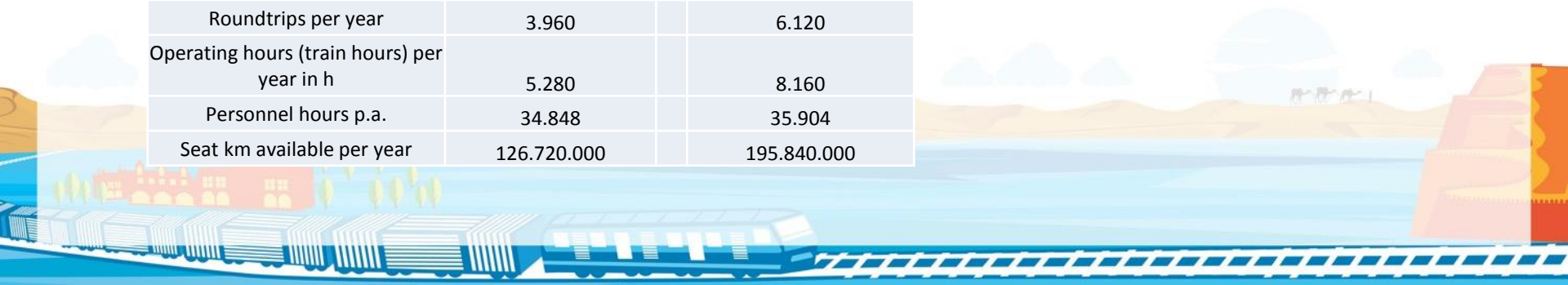
- Efficiency
  - Rolling Stock utilization
  - Staff optimization
  - Network utilization



- Efficiency
  - KPI local train services

KPI	11 trips	17 trips
train km	18,08	12,29
Costs in Manat		
Km per EMU Unit	63.360	97.920
Costs per seat km (Manat)	0,0452	0,0307
revenue per passenger km	0,0335	0,0335
Costs per operating hour	1084,70	737,53
Costs for staff per train/km	0,40	0,27
Average passenger per train	193	163
Capacity utilization	18%	15%
Train-km p.a.	316.800	489.600
Total number of needed operational staff (driver and conductors)	21	22
Roundtrips per year	3.960	6.120
Operating hours (train hours) per year in h	5.280	8.160
Personnel hours p.a.	34.848	35.904
Seat km available per year	126.720.000	195.840.000

- Registration of costs per asset and time required
- Time table and capacity planning required



- **Efficiency**

- Asset utilization – more km per asset (loco, train, wagon)
- Staff Training – improved and more flexible use of staff
- Infrastructure Capacity use – time table



- Market Orientation / Innovation
  - Market Share
  - New Businesses
  - New added values
  - Market Research
  - Sales Channels





- Market Orientation / Innovation
  - Accessibility for customers (booking options)
  - Transparency in services
  - Discussion of requirements and adjustment of services

