TRB

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A PROPOSED INFRASTRUCTURE PRICING METHODOLOGY FOR MIXED-USE RAIL NETWORKS

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2.- Proposed pricing methodology

3.- Application

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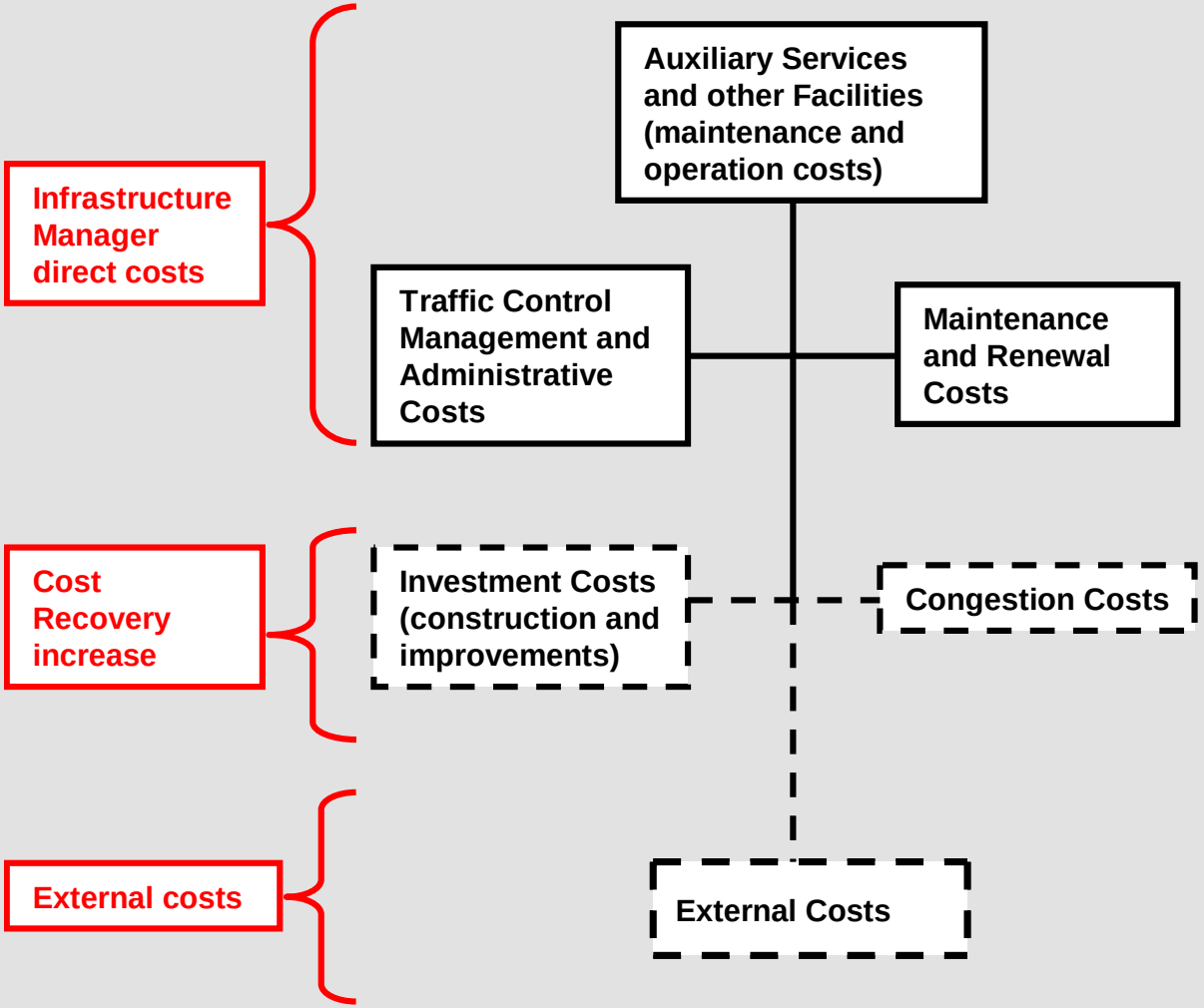
1.- Introduction

RR. INFRAS. PRICING IN EUROPE	Marginal Social Cost (MSC)	Full Cost Pricing Model (FC)
Main Objectives	Transport system sustainability as a whole	• Cost recovery • Increased railway efficiency • Transfer of traffic from road
Pricing Level	Costs directly related to train traffic (10% of FC)	Between MSC and all of the costs (40-65% of FC)
Pricing System	Simple Tariff: variable charges (train-Km, TKB..)	• Two-part tariff • Ramsey Prices
Examples	Sweden, Switzerland, Denmark	France, Spain, Italy, United Kingdom, Germany
•Complex calculation of total rate in international routes •Pass: 0.6-5.0 €/train-Km; Freight: 0.2-3.8 €/train-Km •Different conditions for access (fixed access charges)		**=> NEW INTER-OPERABILITY PROBLEM**

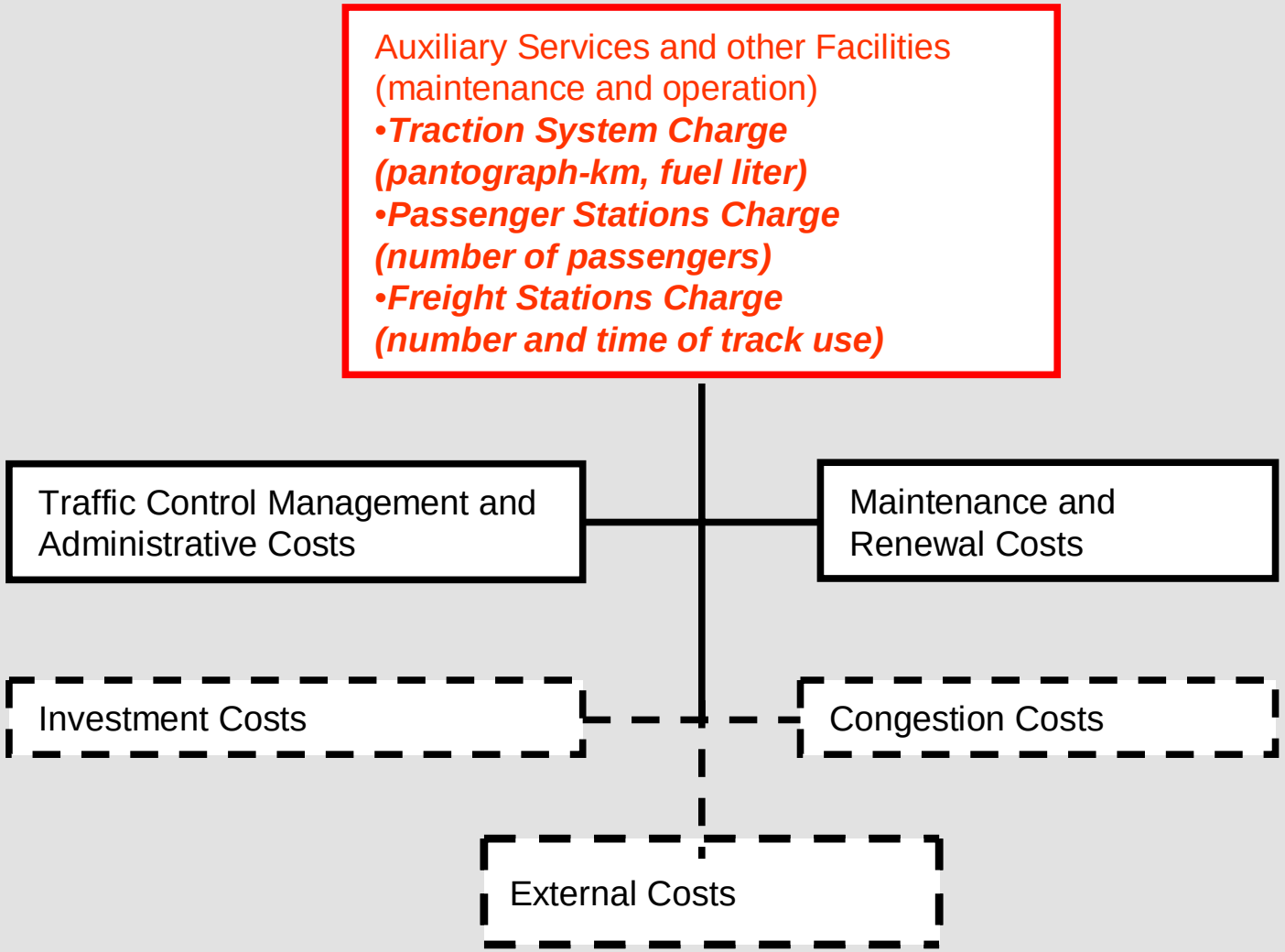
2.- Proposed pricing methodology

DIAGRAM: COSTS CONSIDERED



2.- Proposed pricing methodology

INFRASTRUCTURE MANAGER'S DIRECT COSTS



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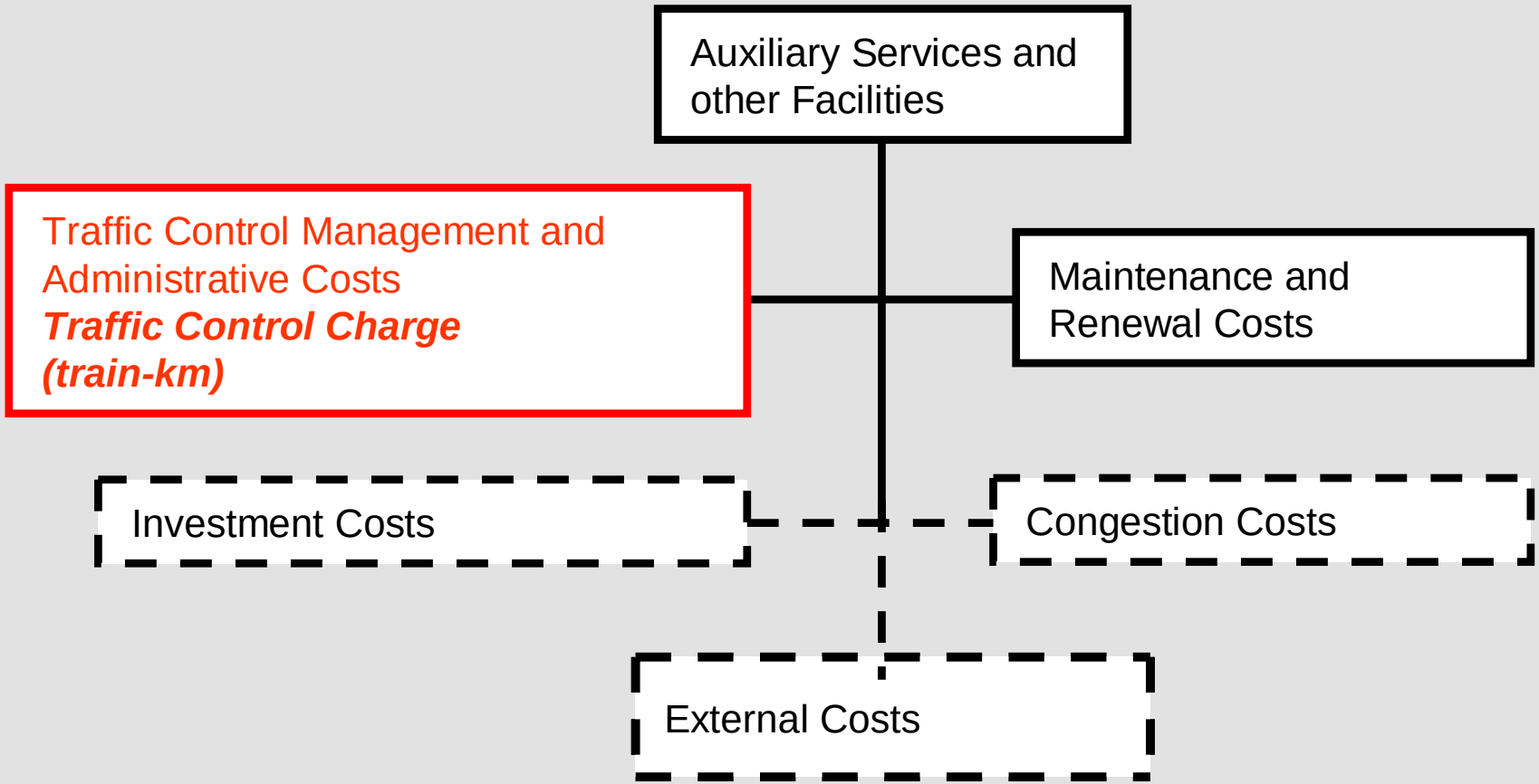

2.- Proposed pricing methodology

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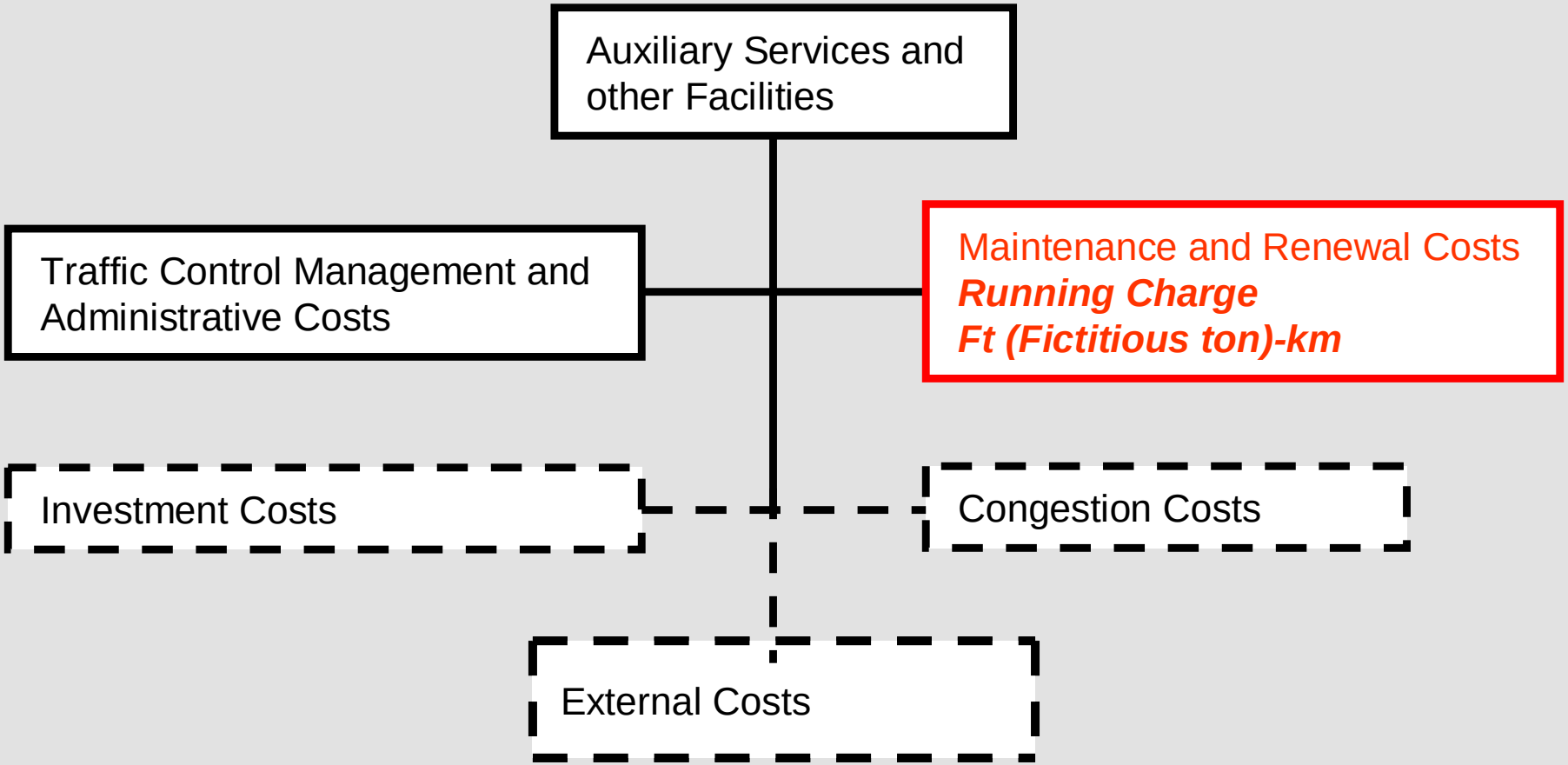
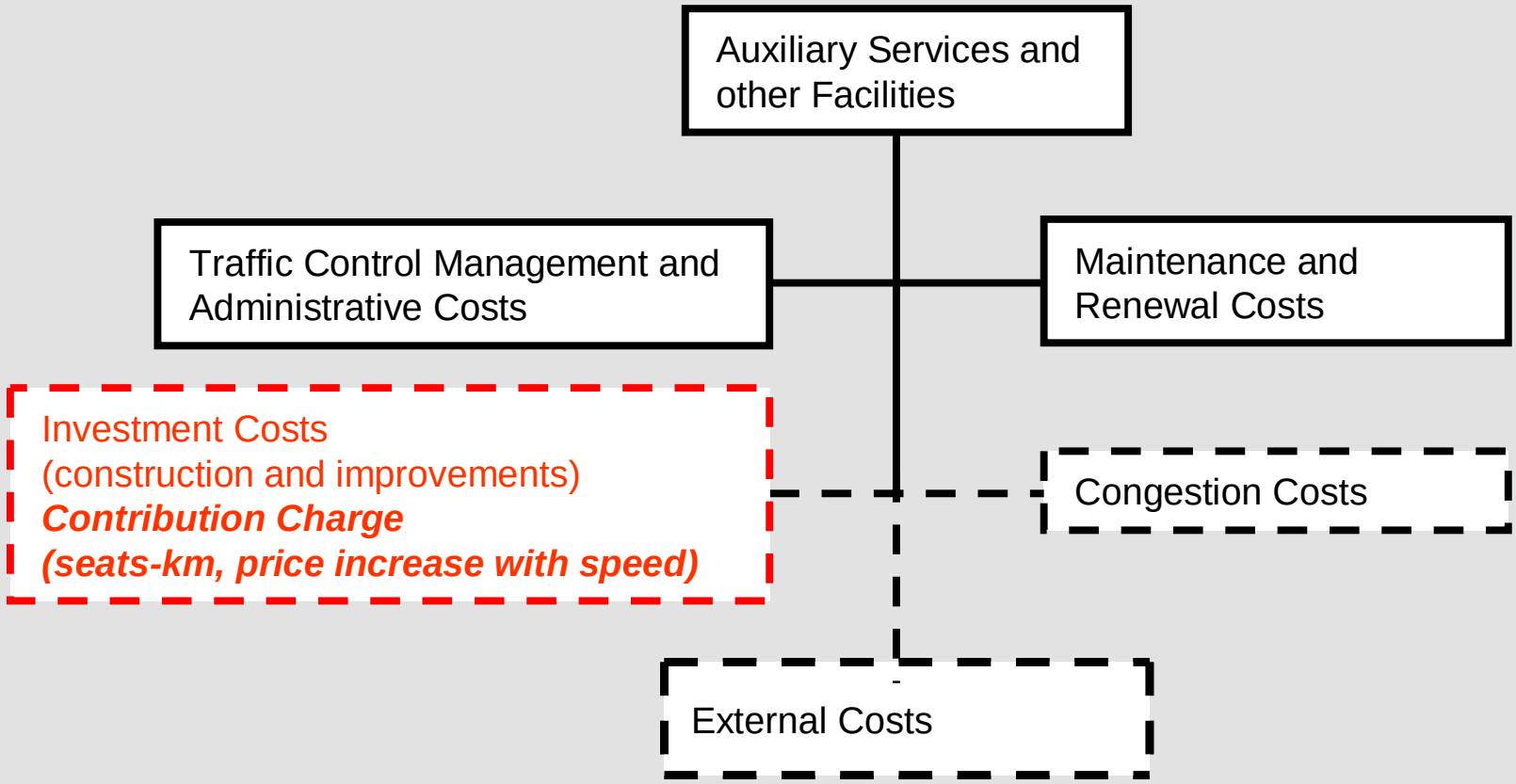


2.- Proposed pricing methodology

ADDITIONAL FEES TO INCREASE COST RECOVERY



2.- Proposed pricing methodology

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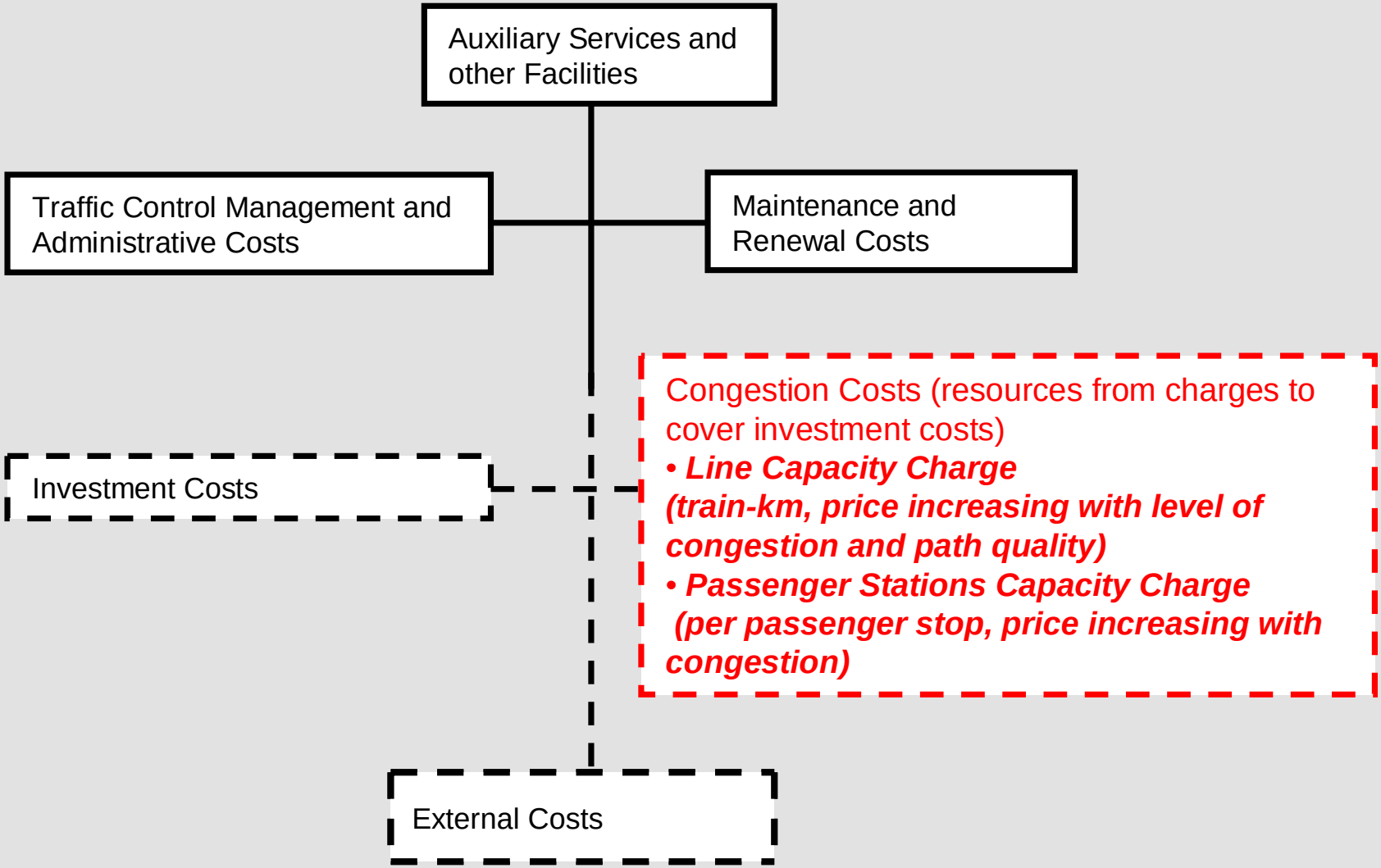
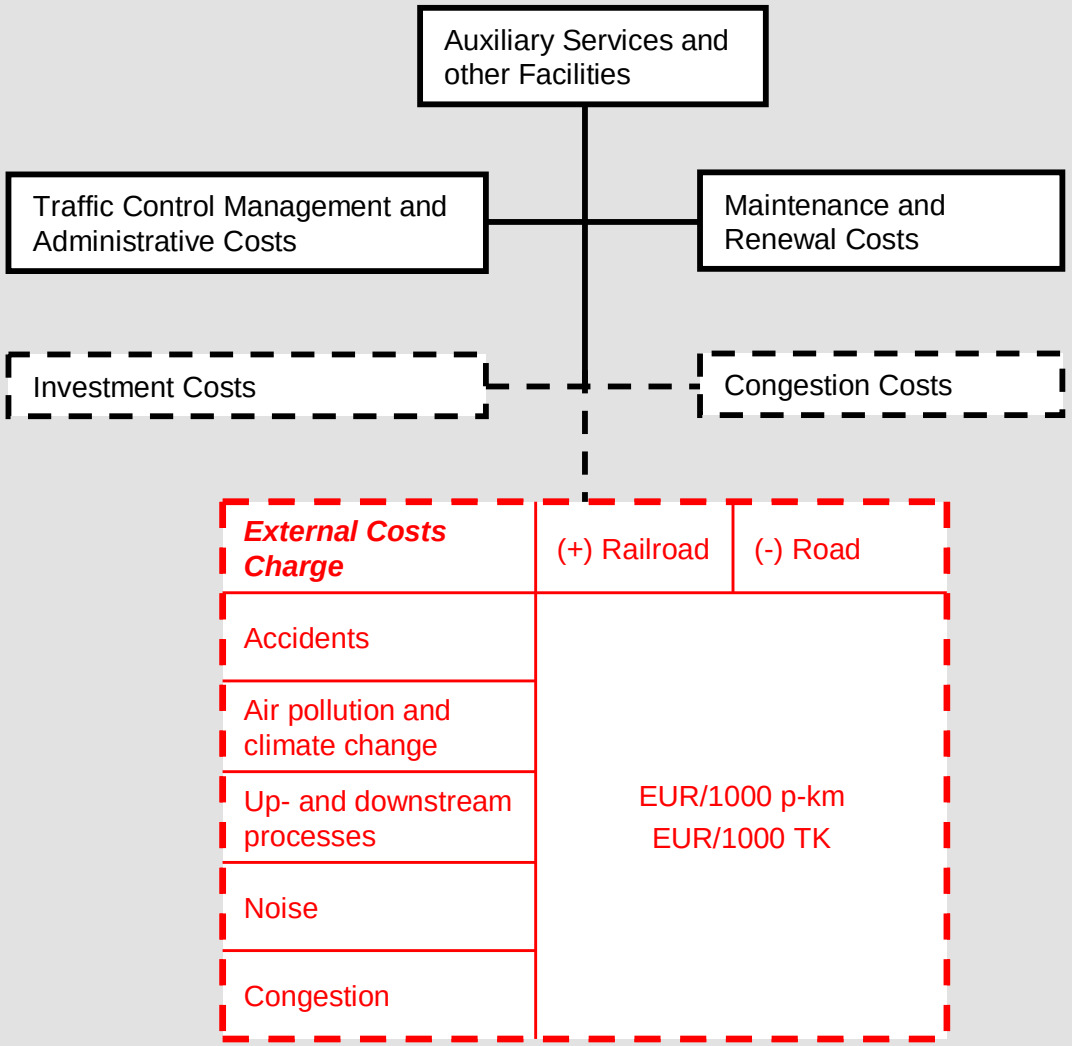


2.- Proposed pricing methodology

FEES RELATED TO EXTERNAL COSTS



3.- Application

PRICING METHODOLOGY INFLUENCE FACTORS

- RAILROAD NETWORK FEATURES
  - **Rail Line Type:**
    - Conventional lines
    - High speed lines
  - **Network's Level of Congestion**
    - Lines around major cities
    - Border crossings
    - Mountain passes
- TRANSPORTATION SERVICES
  - **Suburban trains**
  - **Regional trains**
  - **Conventional Long-Distance trains**
  - **High-Speed trains**
  - **Freight trains**

3.- Application

PRICING METHODOLOGY INFLUENCE FACTORS

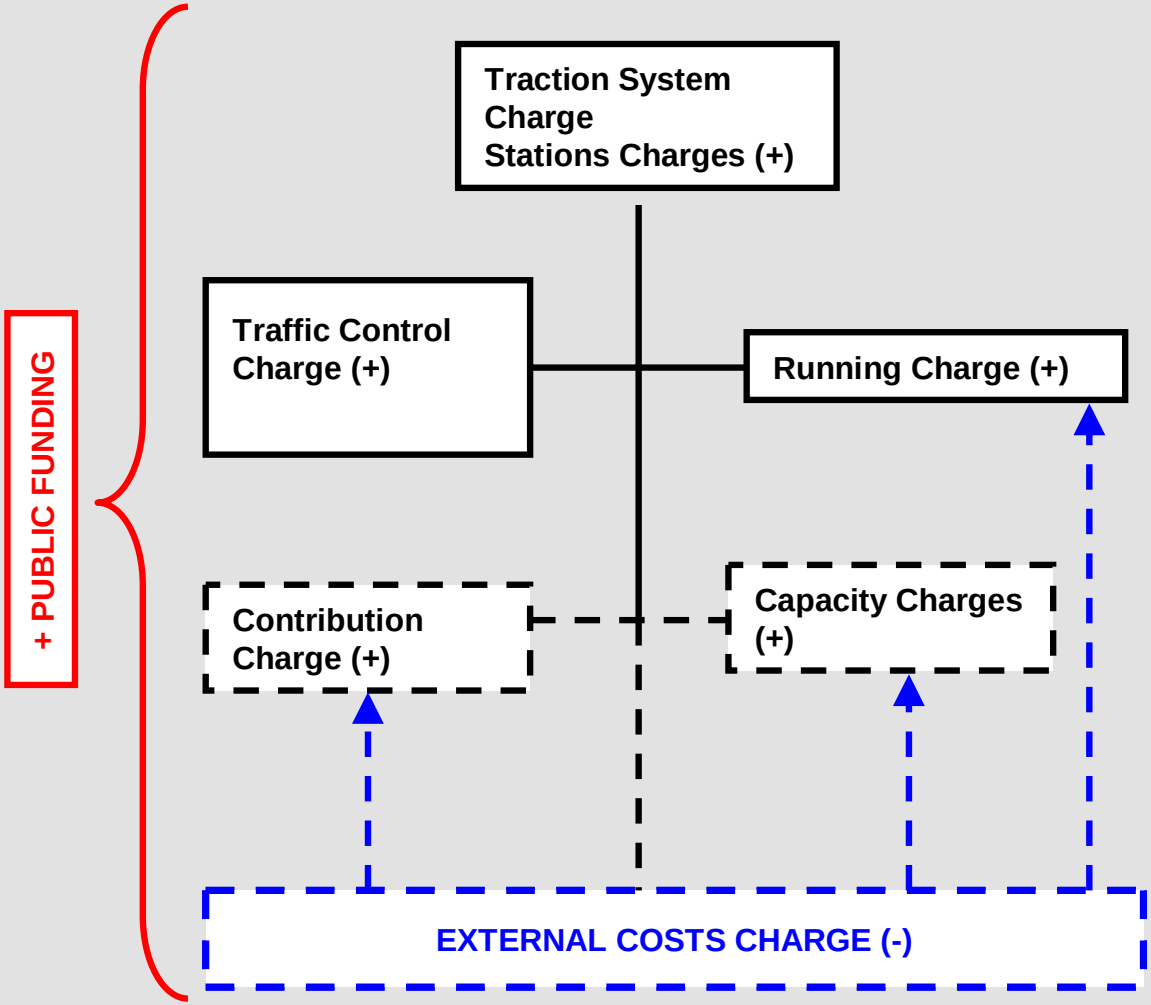
- GOVERNMENT SUBSIDIES TO THE RAILROAD
- MARKET COMPETITIVE SITUATION FOR RAILROAD
- TRANSPORT SYSTEM SUSTAINABILITY

MAIN EXTERNAL COSTS	Passengers (Euros/1000 p-km)		Freight (Euros/1000 TK)	
	Road	Railroad	Road	Railroad
Accidents	32,4	0,8	7,6	0,0
Air pollution and climate change	29,7	13,1	59,7	11,5
Up- and downstream processes	5,0	3,4	8,8	2,4
Noise	5,1	3,9	7,4	3,2
Congestion	8,8	0,0	10,2	0,0
Total	**81,0**	**21,2**	**93,7**	**17,1**

- PUBLIC SERVICE CONSTRAINTS
- EUROPEAN UNION TRANSPORTATION POLICIES

3.- Application

ADJUSTING THE PRICING MODEL TO RAIL SERVICES



3.- Application

ADJUSTING THE PRICING MODEL TO RAIL SERVICES

- SUBURBAN TRAINS

General features: distance ≈ 50 Km; speed ≤ 100 Km/h

- **Conventional lines**
- **Lines around major cities**
- **High frequency (peak hours)**
- **High operating costs**
- **“Social prices”**
- **Operate at a deficit**
- **Contribute significantly to quality of life in cities**

CHARGE \ RAIL SERVICE	Suburban
Contribution	↑
Capacity	↑
Running	10% ↑
Traffic control	
Auxiliary Services and other Facilities	
External costs	

3.- Application

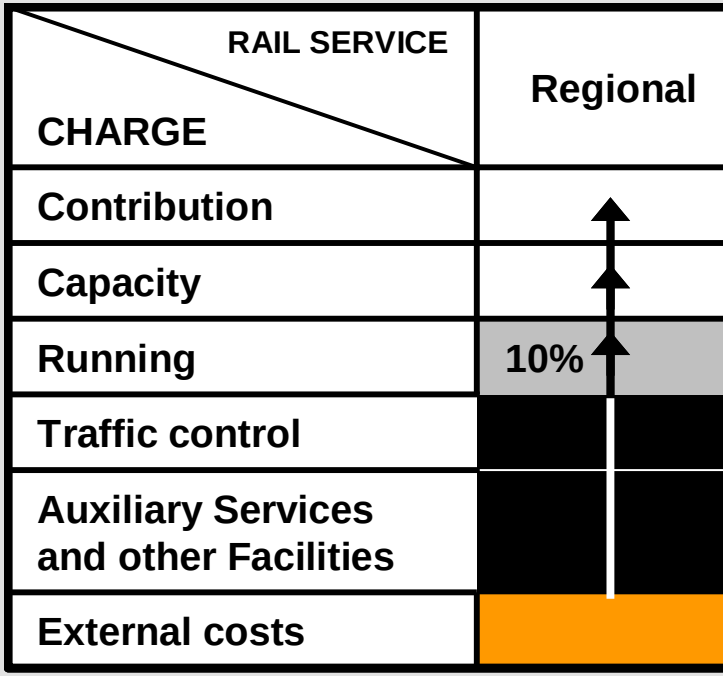
ADJUSTING THE PRICING MODEL TO RAIL SERVICES

- REGIONAL TRAINS

  Distance 50-250 Km;

  speed ≤ 120 Km/h

  - **Operate on uncongested lines (except in access to major cities)**
  - **Serve less densely populated areas**
  - **Low frequency**
  - **Un-modernized lines and rolling stock**
  - **Strong competition from private automobiles**
  - **"Social prices" to ensure accessibility**
  - **Operate at a deficit**
  - **Sustainable transportation**



3.- Application

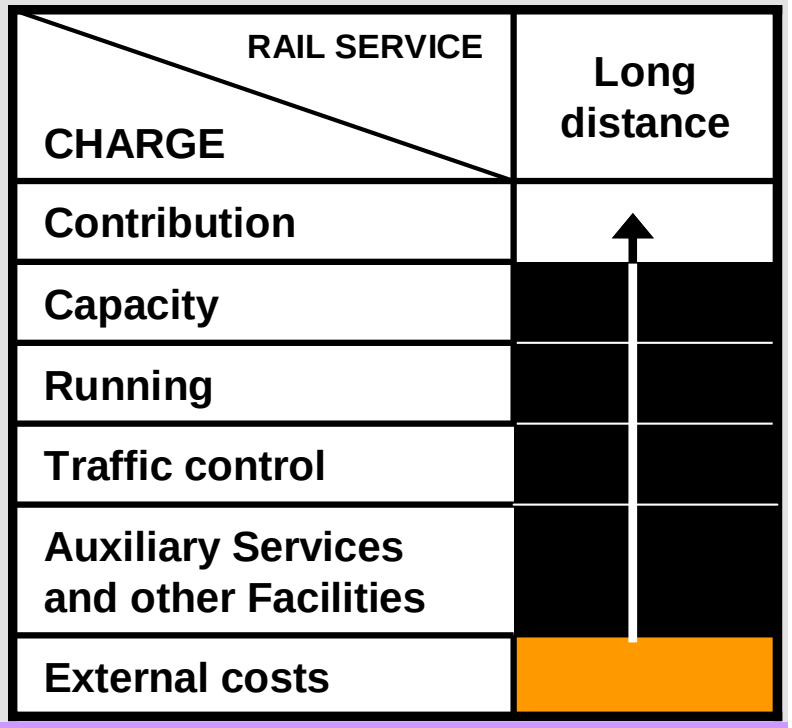
ADJUSTING THE PRICING MODEL TO RAIL SERVICES

- LONG-DISTANCE TRAINS

Distance ≥ 250 Km;

speed ≤ 160 Km/h

- **Operate on conventional lines (modernized)**
- **Link important cities (high demand)**
- **Have priority for slots**
- **Quality service**
- **Compete with road transportation**
- **No "Social prices"**
- **Profitable transportation services**
- **Sustainable transportation**



3.- Application

ADJUSTING THE PRICING MODEL TO RAIL SERVICES

- HIGH-SPEED TRAINS

Distance ≥ 250 Km;

speed ≥ 200 Km/h

- **High-speed lines**
- **Link important cities (high demand)**
- **Have priority for slots (on conventional lines)**
- **High quality service**
- **Compete with road and air transportation**
- **No “Social prices”**
- **Profitable transportation services**
- **Sustainable transportation**

CHARGE \ RAIL SERVICE	High speed
Contribution	25%
Capacity	
Running	
Traffic control	
Auxiliary Services and other Facilities	
External costs	

3.- Application

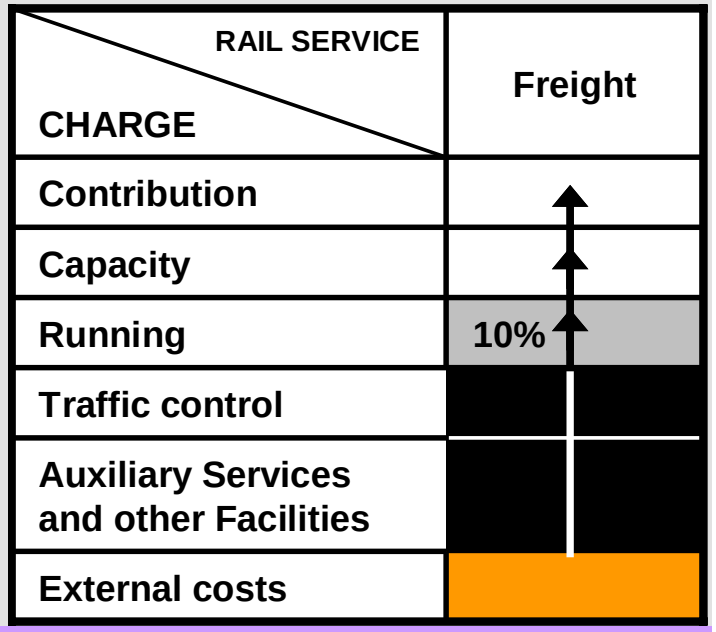
ADJUSTING THE PRICING MODEL TO RAIL SERVICES

- FREIGHT TRAINS

  Distance ≥ 200 Km;

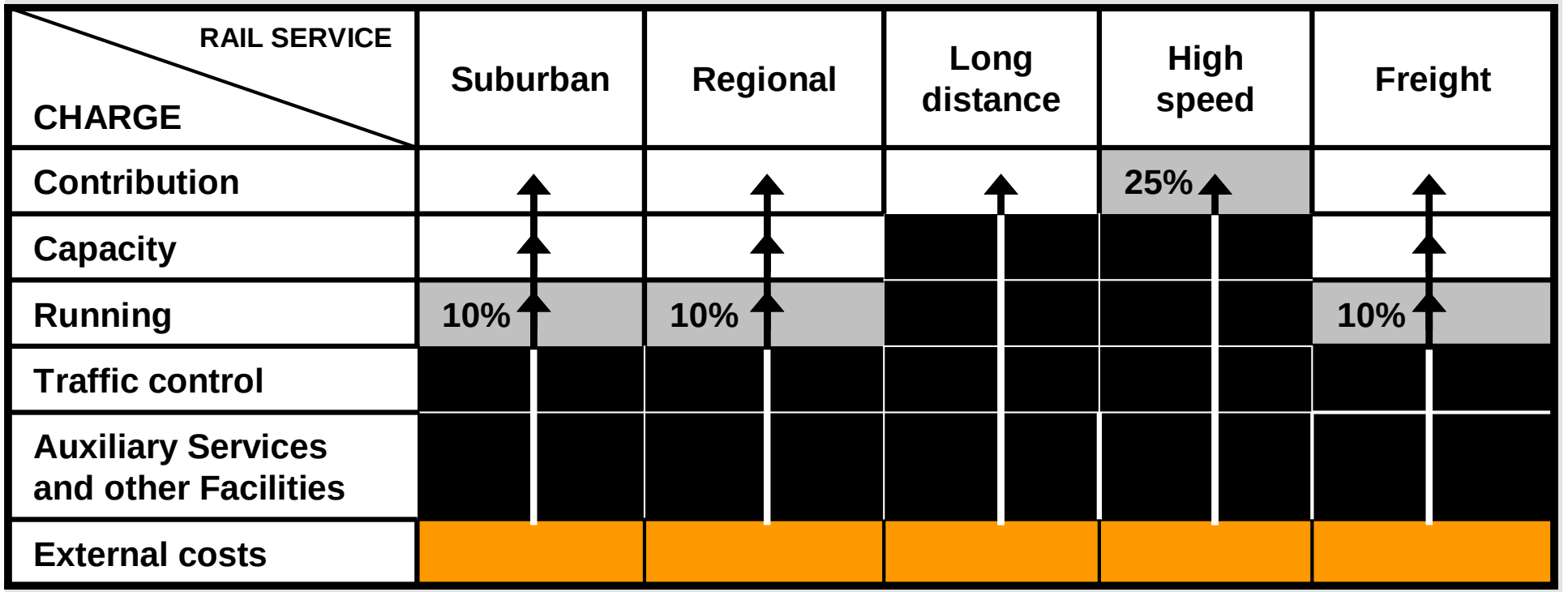
  speed ≤ 100 Km/h

  - **Conventional lines**
  - **Link major production and consumer centers**
  - **Lack of priority**
  - **Interoperability and market access problems**
  - **Strong competition from road haulage**
  - **Sustainable transportation**
  - **If over charging:**
    - **Increased external costs**
    - **Decreased international rail transportation**



4.- Conclusions

COST ALLOCATION AND FUNDING OF THE PRICING SYSTEM



Black boxes: Charge fully paid by operators
Gray boxes: Charge partially paid by operators (compensated by the External Costs Charge)
Orange boxes: Savings in external costs
White boxes: Charge financed by the External Costs Charge (savings) and government subsidy
Arrows: funding transfers.

4.- Conclusions

COST ALLOCATION AND FUNDING OF THE PRICING SYSTEM

SPAIN: External Costs	Passengers		Freight	
	Road	Railroad	Road	Railroad
External Cost (€/1000 p-km; €/1000 TK)	50	18	92	18
Anual demand met by railroad (millions)	19.017	19.017	11.927	11.927
External Costs (million €)	947	335	1.093	212
Diference (millions €)		**-612**		**-880**
Saving in External Costs (millions €)				**1.493**

p-km: passenger-km; TK: net ton-km. Source: INFRAS/IWW (2004) and RENFE (2004)

SPAIN: Anual Investment in Rail. Infras. (construction, improvements and maintenance, millions €)	
GIF (Infrastructure Manager)	2.312
Dirección General Ferrocarriles (Railroads Department)	562
RENFE (Spanish national railroad company)	678
TOTAL	**3.552**
% Saving in External Costs/Investment	**42**

Source: Spanish Ministry of Development (2004)

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THANK YOU VERY MUCH FOR YOUR ATTENTION

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