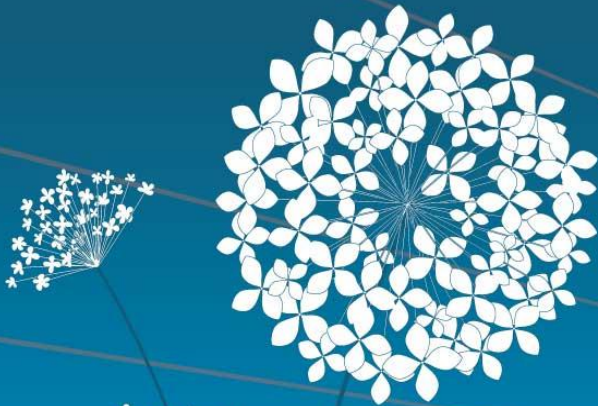


ANTWERPEN, 16 - 19 JUNE



WORKSHOP LOAD FACTOR INTRODUCTION

*WIM BONTINCK, SNCB ENVIRONMENTAL AND ENERGY
MANAGEMENT*

*CHAIR OF UIC ENVIRONMENT, ENERGY AND SUSTAINABILITY
PLATFORM*

Energy Efficiency, the best fuel to move our trains!

LOAD FACTOR PASSENGER TRAIN

$$\frac{\text{passengers} - km}{\text{seat} - km}$$

- Total year average for all trains of a railway operator
- average for a specific train service
- Max value between 2 stops for a certain train
- Real time value for a certain train
- Real time value for each coach in a train

Source key world energy
statistics iea



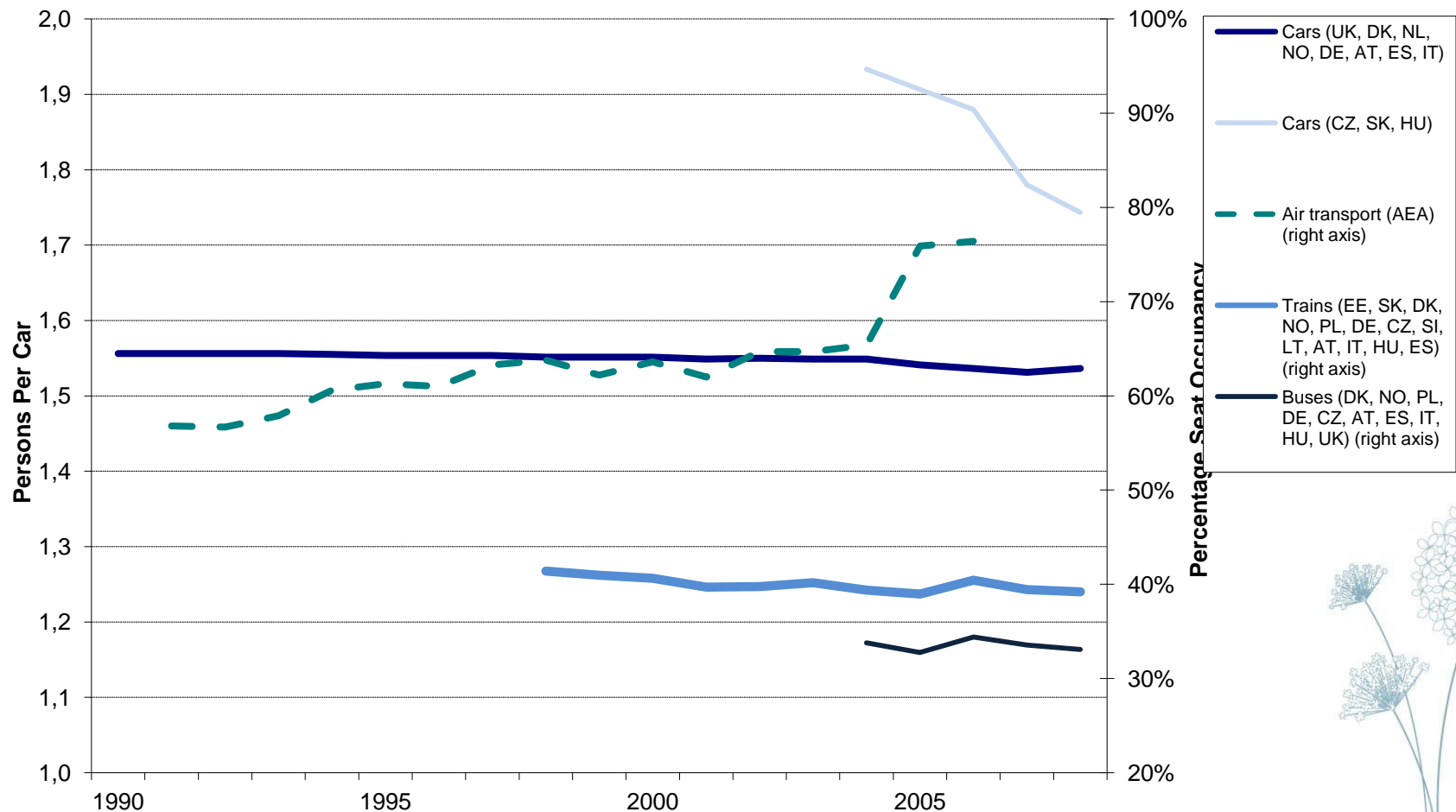
LOAD FACTOR ASSESSMENT

PASSENGER TRAIN

- Easy to determine when reservation is required
- Periodic counting / estimation by train personal
- Automatic camera detection on doors
- Automatic detection of weight of each seat
- Automatic detection of weight of coach
- ...?

Source key world energy
statistics iea





Source: EEA, metadata, TERM29



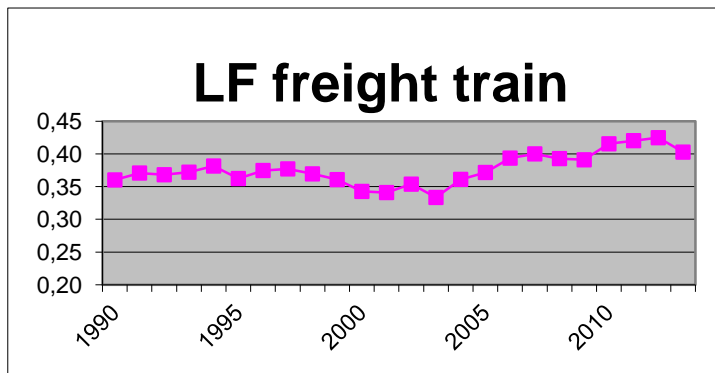
LOAD FACTOR FREIGHT TRAIN

$$\frac{\text{Net} - tkm}{\text{Gross} - tkm}$$

- Total year average for all trains of a railway operator
- Mass locomotive included
- Mass of container = net-tkm
- Empty trips included or not



Empty trip factor (%):
additional distance
empty related to the
loaded distance.



LOAD FACTOR DISCUSSION

- Is load factor a strategic KPI for a railway operator?
- How is this KPI used?
- Is detailed load factor information available for the energy manager?
- Tools such as ecopassenger or ecotransit need to presume load factor, is load factor commercial sensitive data?



ANTWERPEN, 16 - 19 JUNE



INS&OUTS: IMPROVING JOURNEY EXPERIENCE WITH REAL-TIME PASSENGER COUNTING



iNS&outs

RAMON LENTINK

NETHERLANDS RAILWAYS

Energy Efficiency, the best fuel to move our trains!

THE IDEA OF INS&OUTS

- Give passengers control over finding seating places by providing real-time occupation information at compartment level.
- Passengers complain about the (lack of) travel information, especially during disruptions.
- Investigate how innovation can be leveraged when current tools and systems will be connected.



INTRODUCTION VIDEO

<http://www.youtube.com/watch?v=gvKM158XSI4>



INFRABEL



iNS&outs

ENERGY EFFICIENCY DAYS 2014

PRIZES

- A lot of media attention
- Winner Most Innovative Company 2013
- Winner Sign Design Award 2013, category Product Innovation
- Winner Rotterdam Design Public Prize 2013
- Winner Design & Art Direction Pencils 2014



INFRABEL



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ENERGY EFFICIENCY DAYS 2014

CHALLENGES FOR THE NEAR FUTURE

- 2014 for governance, 2015 estimated start
- Investigate possibility of retrofitting all of our rolling stock
- Real-time occupation leaves little space for post processing



TARIFF DIFFERENTIATION

AN EFFECTIVE WAY TO OPTIMIZE THE LOAD FACTOR OF THE TRAIN

Thibaut Francon
Revenue Management Analyst

BIENVENUE CHEZ NOUS
VAN HARTE WELKOM
WILLKOMMEN BEI UNS
WELCOME TO OUR WORLD



CONTENTS

- I. REVENUE MANAGEMENT DEFINITION (OR YIELD MANAGEMENT)
- II. DIFFERENT FARES TO IMPROVE OCCUPATION RATES
- III. JOURNEY MANAGEMENT
- IV. DEMAND TRANSFERS
- V. BETTER USE ROLLING STOCK FOR BETTER PROFITABILITY

REVENUE MANAGEMENT DEFINITION

The Yield Management or Revenue Management will maximize the Revenue thanks to the demand management

The Revenue Management use different technics to combine volume and average rate to reach highest potential revenue.

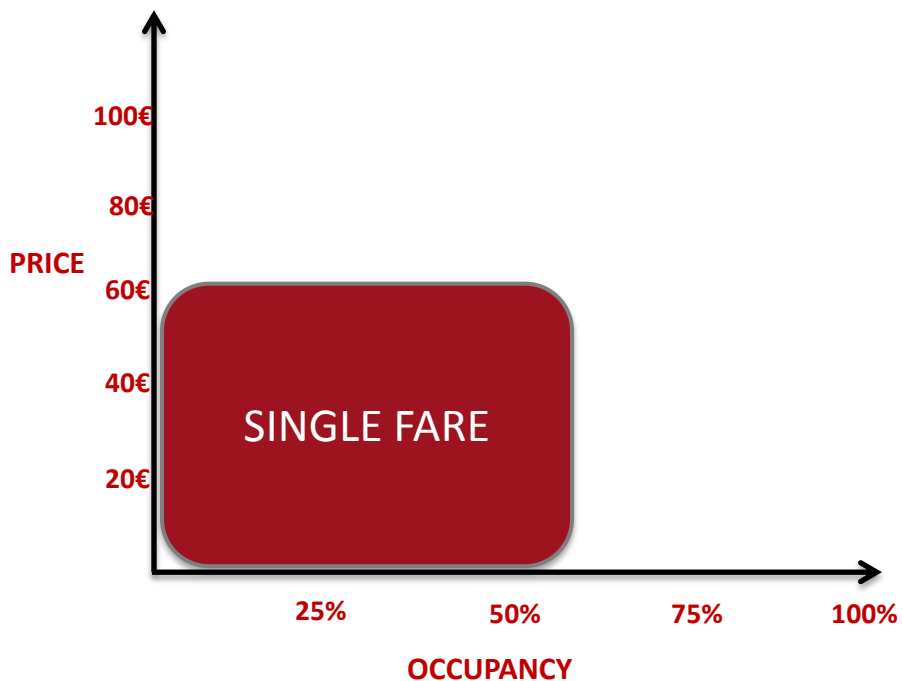
The Revenue Management is applicable on Service Company with a fixed capacity, perishable product, advanced booking, high fixed cost and easy segmentation of the customers.

REVENUE MANAGEMENT OPTIMIZATION LEVERS :

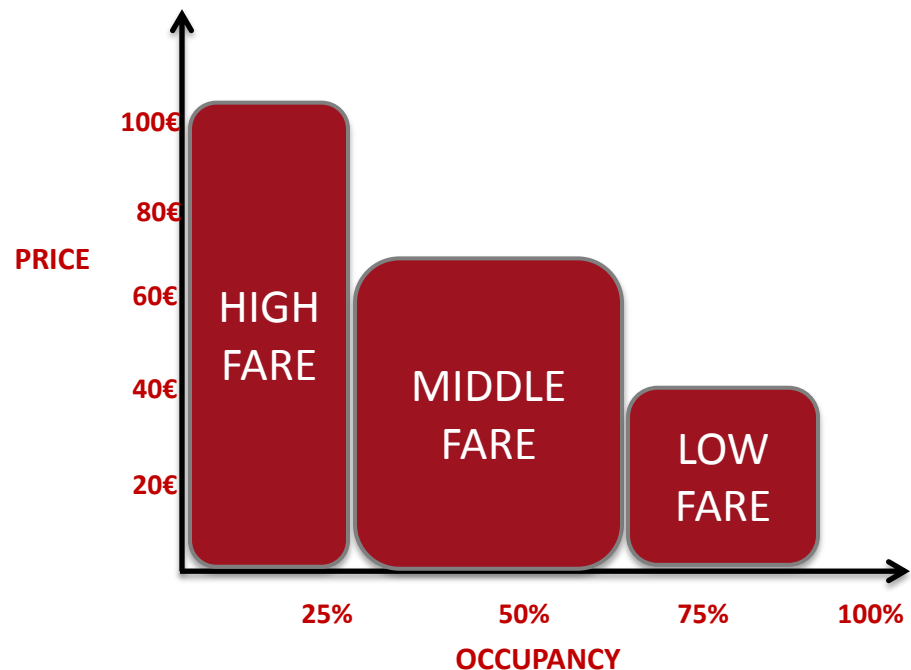
- ✓ Rates Management
- ✓ Journey Management (Origin-Destination)
- ✓ Groups Management
- ✓ Overbooking
- ✓ Upgrade/Transfers

DIFFERENT FARES TO IMPROVE OCCUPATION RATES

Without yield management strategy...



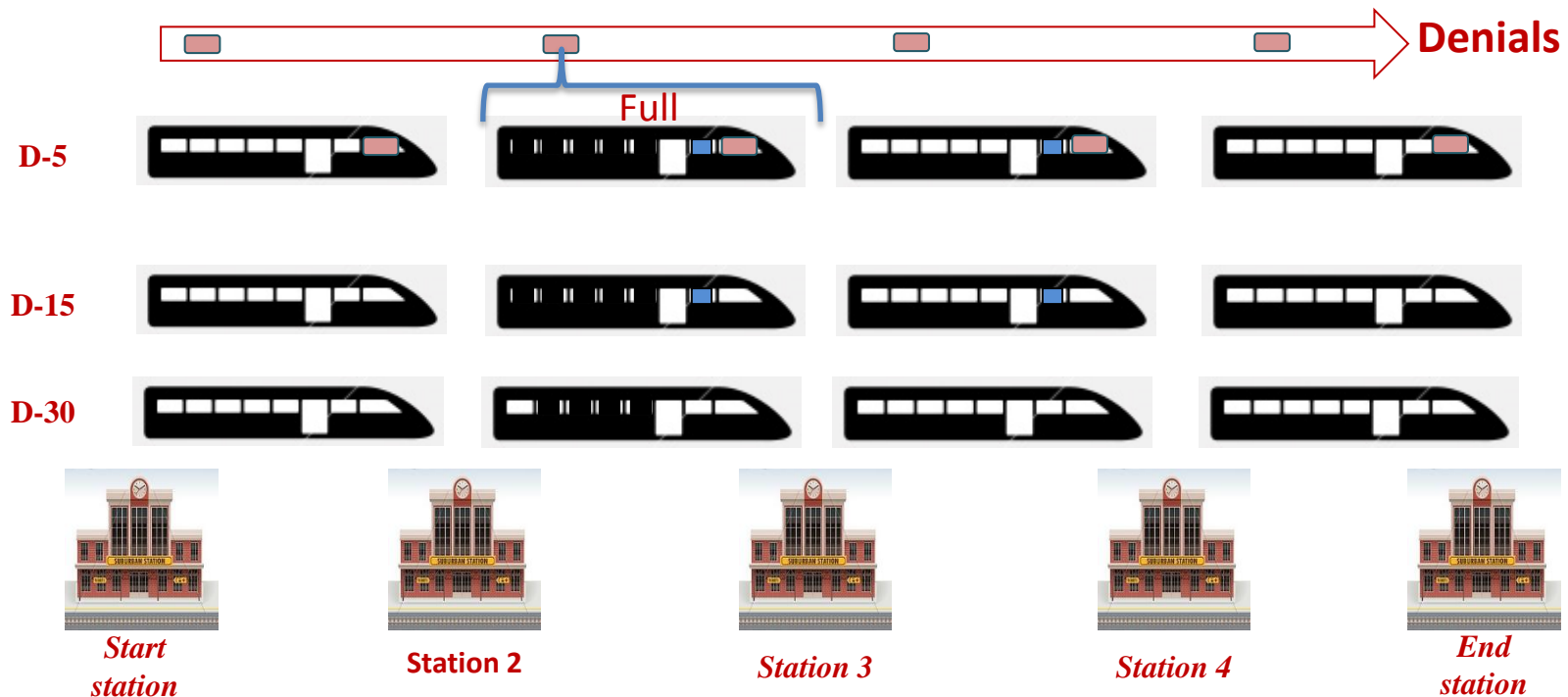
With yield management strategy....



- ✓ Several fares allow to improve the occupation rate and so optimize the pkm (passengerkm)

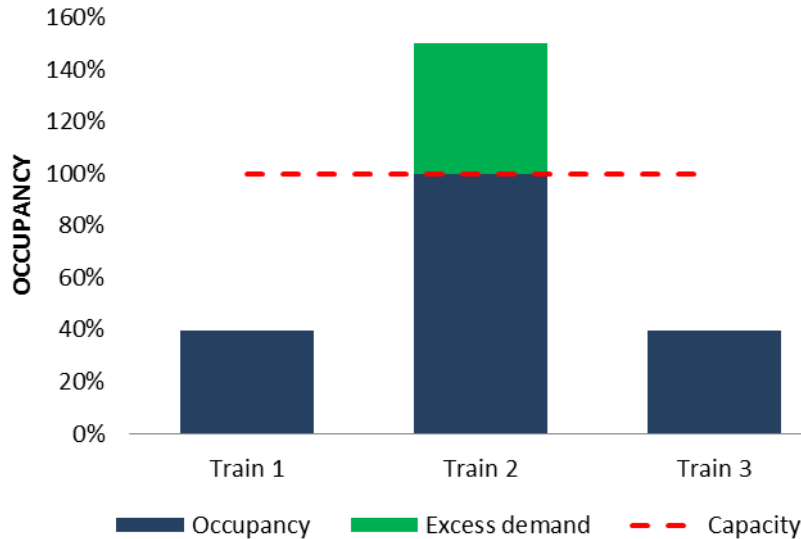
JOURNEY MANAGEMENT

With this kind of situation, we will refuse reservation between station 2 and 3 even of a high contribution rate to optimize the longest journey more valuable.

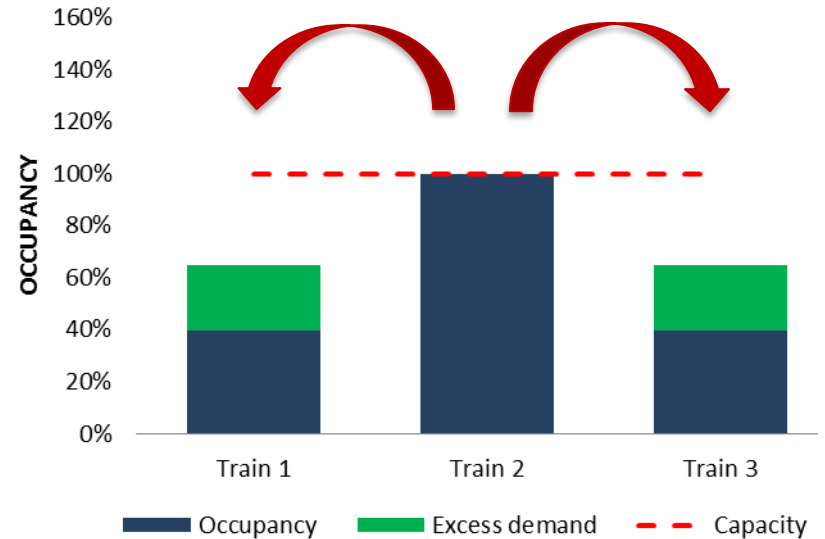


DEMAND TRANSFERS

Without yield management strategy...



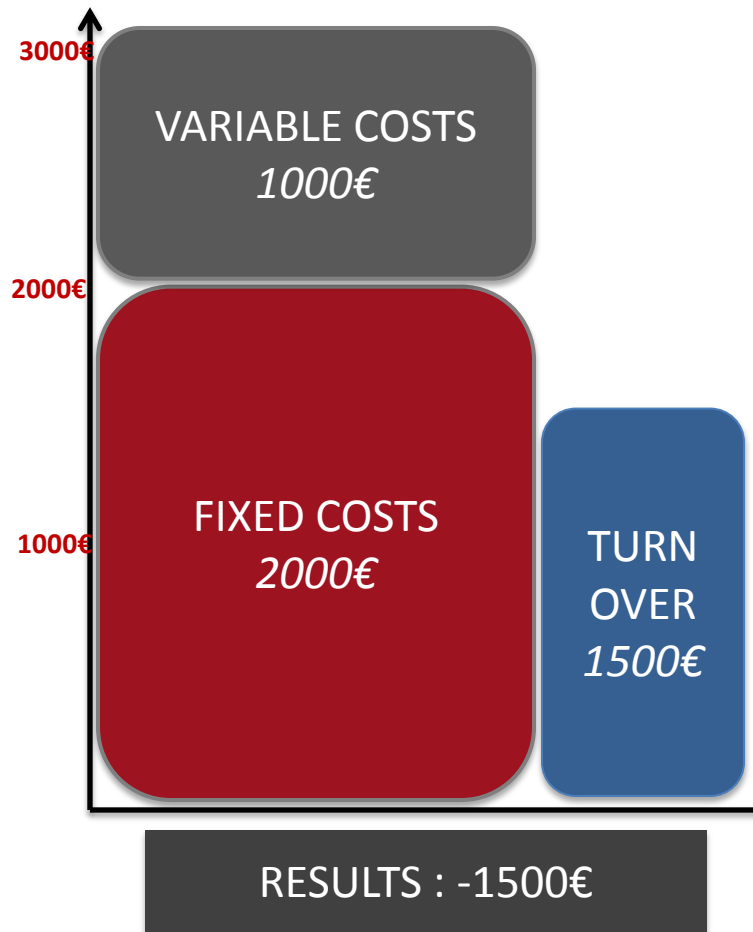
With yield management strategy...



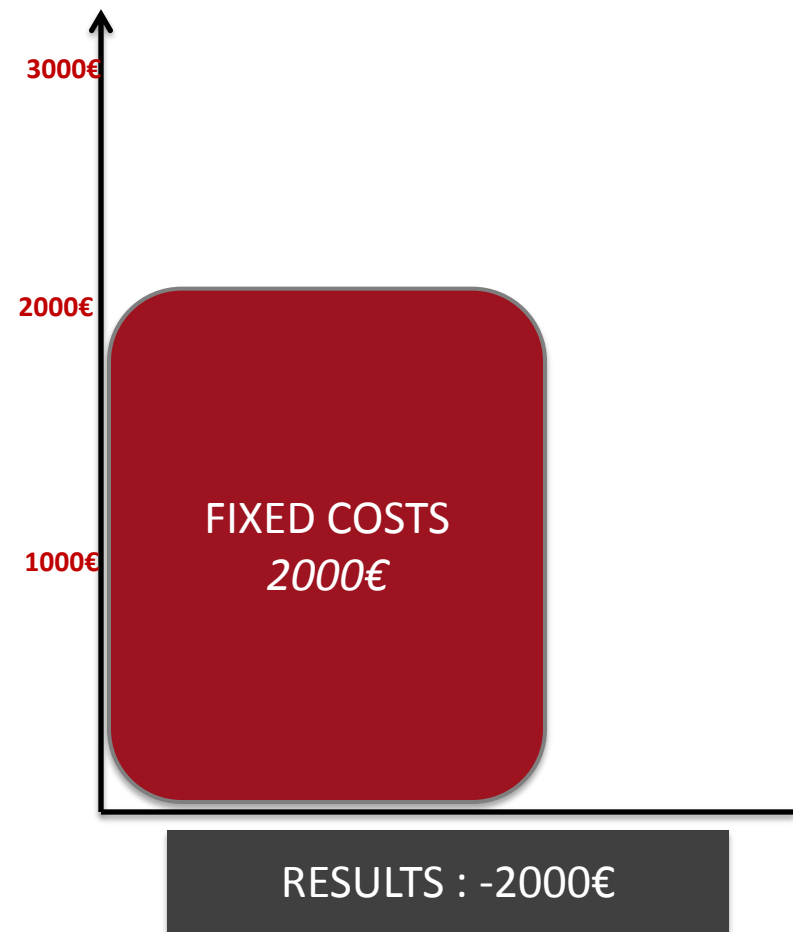
- ✓ Without yield management, Train 2 is on a rush hour and has an excess demand that it can't be accepted
- ✓ The price lever is a way to modified the demand and incite travelers to buy a ticket on another train (1 or 3)
- ✓ Finally, demand is completely absorbed : Train 2 is full and rates of Train 1-3 have been optimized

BETTER USE ROLLING STOCK FOR BETTER PROFITABILITY

Train traveling with a low occupancy...



Train not used...



- ✓ Optimized use of rolling stock is essential for profitability. It would be better to have a train with low rate occupancy than not used, because of the fixed costs.