

SUPPLY CHAIN RESILIENCE CHALLENGE

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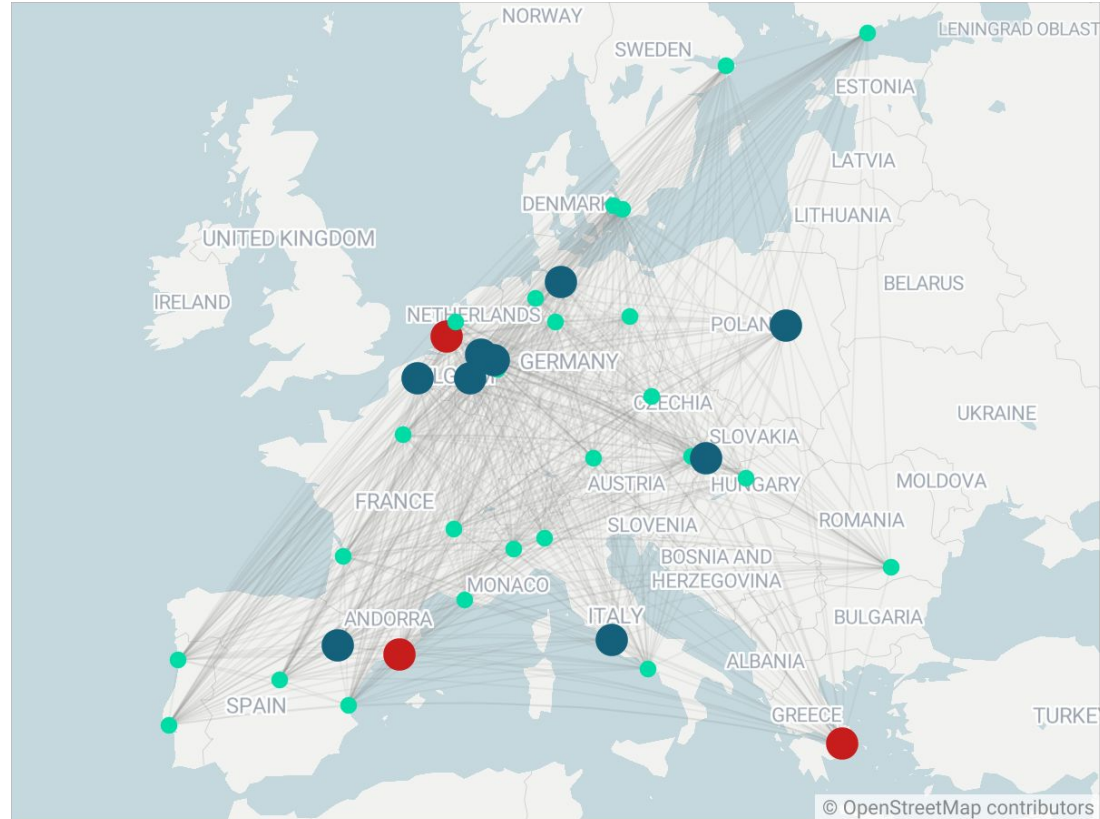
POSSIBLE ACTIONS

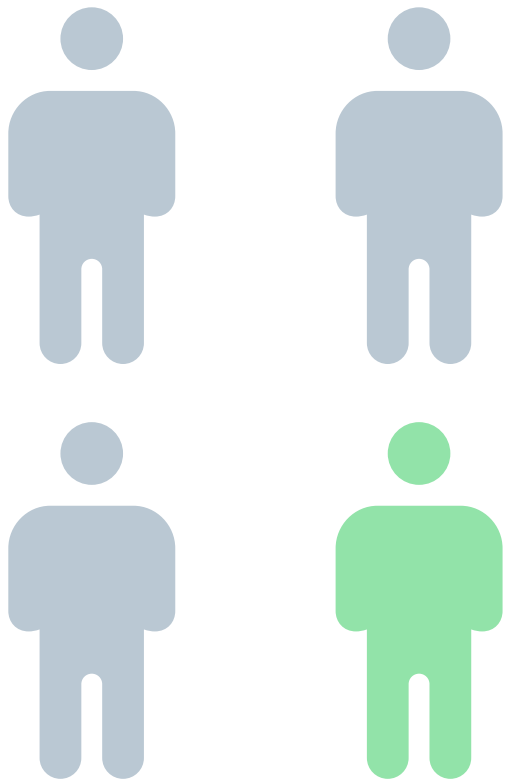
Practical solutions based on previous analysis

04

ABOUT THE CHALLENGE

- 3 origin ports
- 9 logistic hubs in 8 different countries
- 28 destinations in 14 different countries



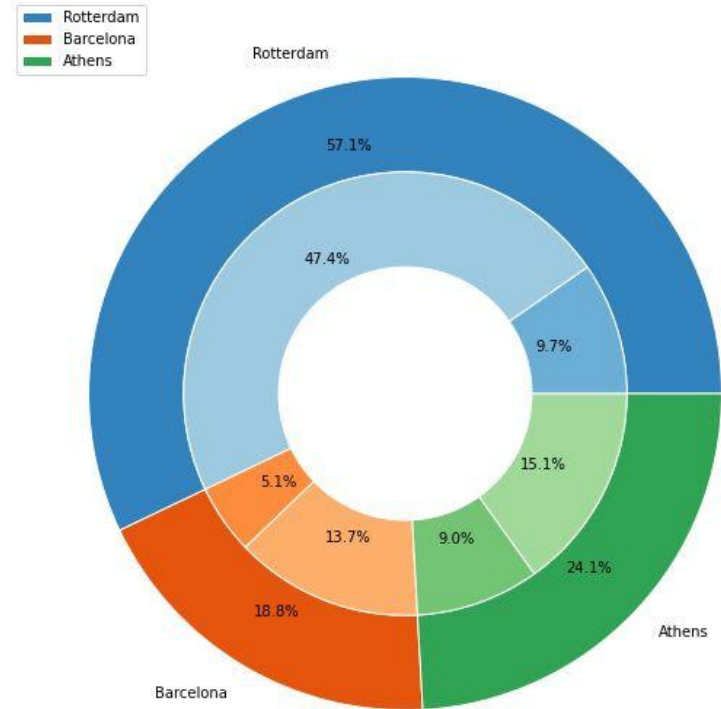


~24%



Delayed orders

ORIGIN PORT IMPACT: A first visualization



ORDER DELAY RATE

ROTTERDAM

+65k supplies

17%



ORDER DELAY RATE

BARCELONA

+21k supplies

27%

0.1 0.5

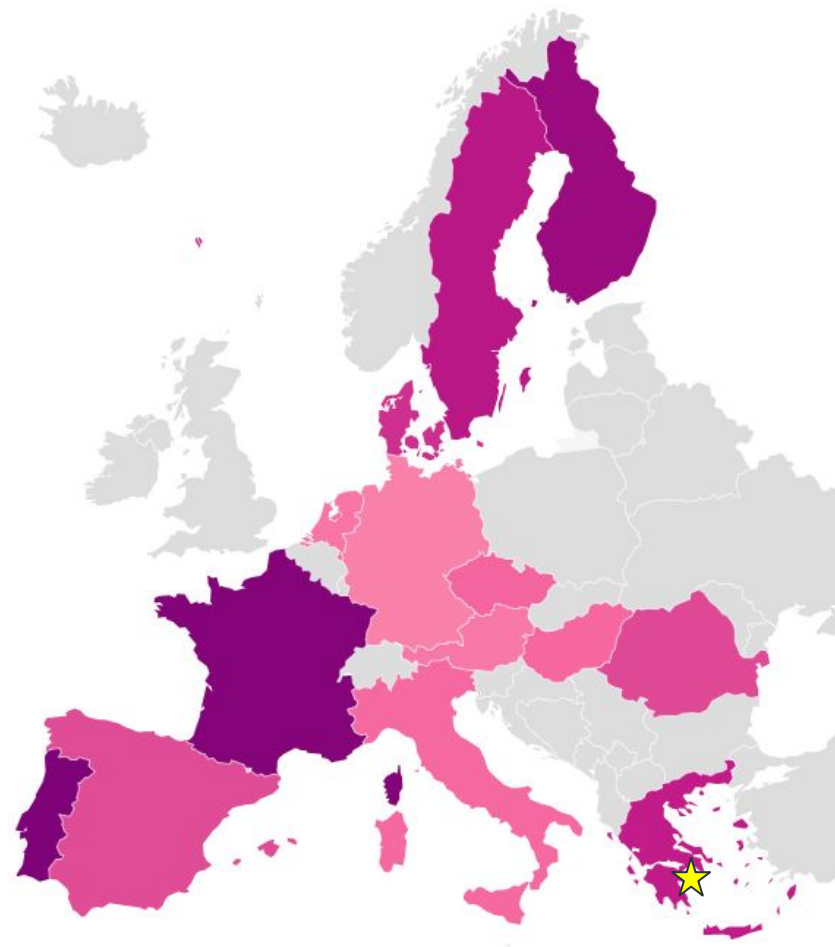


ORDER DELAY RATE

ATHENS

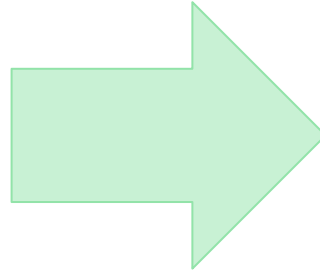
+27k supplies

37%



INDICATORS: SOURCES OF DELAY

Traffic accidents



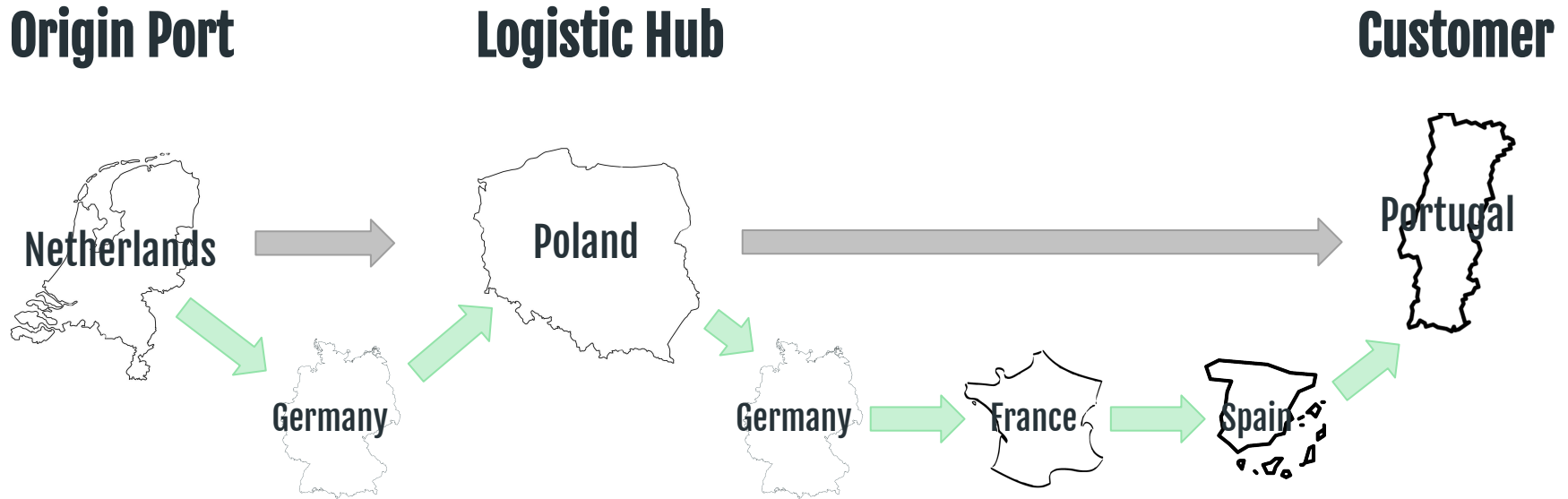
**Late
Delivery**

Traffic jam



Source: confused.com revista.dgt.es

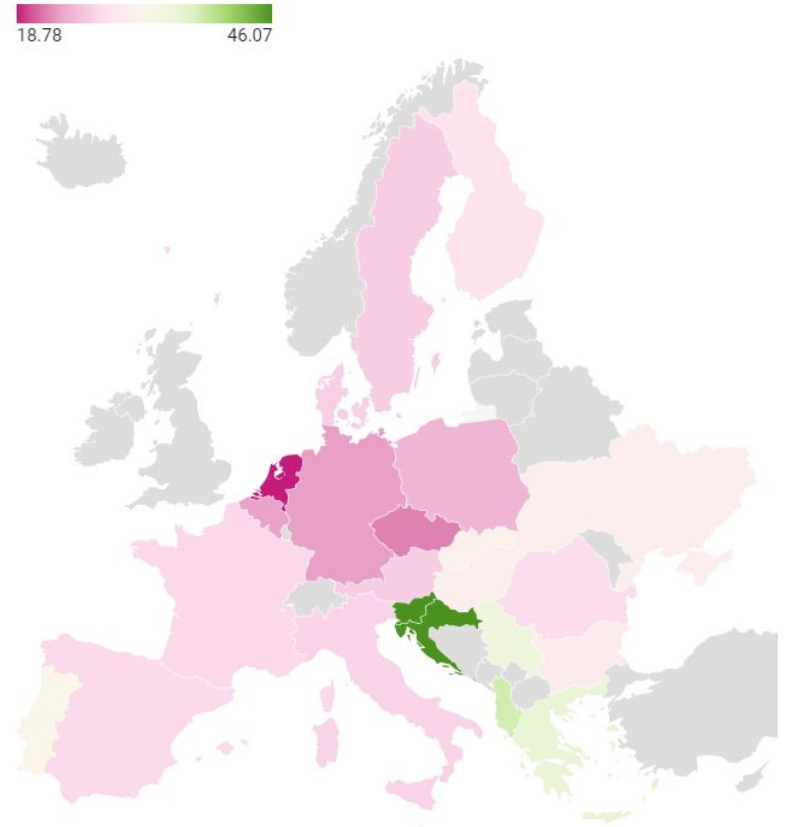
COUNTRY PATH THROUGHOUT THE DELIVERY



NON-OPTIMAL COUNTRIES

Fastest country: Netherlands

Slowest country: Slovenia, Croatia



MODEL



**LOGISTIC
REGRESSION**



XGBoost

WILL THE ORDER BE LATE?

We can predict this correctly
~83% of the times

(plain accuracy)

~83.5% ROC AUC Score

What do these models teach us?

THESE ARE IMPORTANT:

Units

Total distance

Accidents-Indicator

Product (ID)

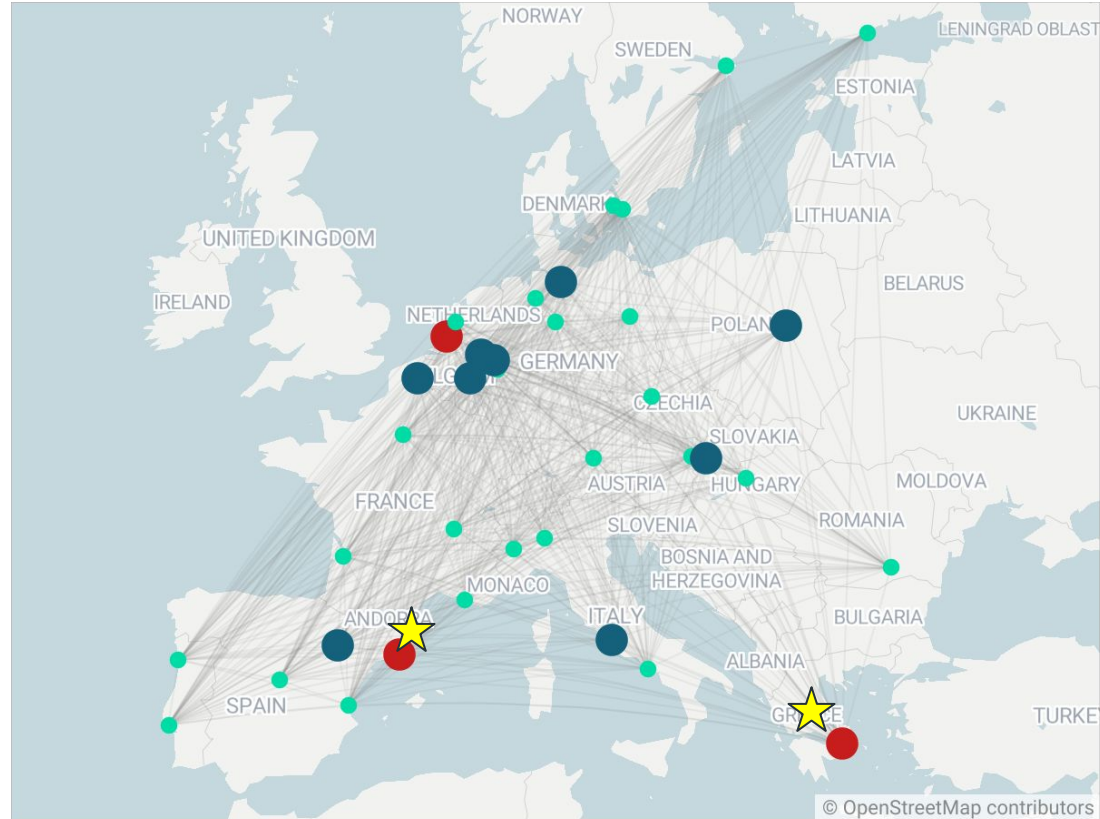
Custom procedures

Jam-Indicator

Parameter value for Logistic, and Feature importance for XGBoost

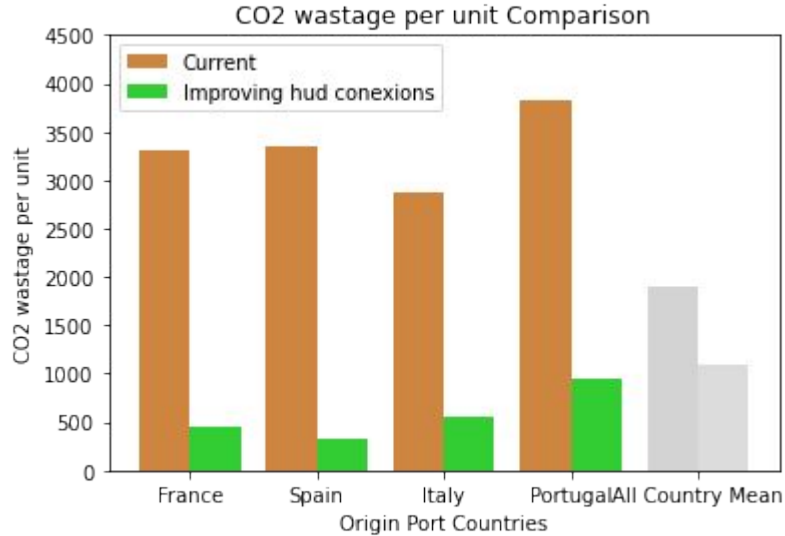
POSSIBLE APPROACHES

- Create new **hubs** or improve capacity
- Contact better suppliers
- Use different ports



HUB BARCELONA or IMPROVING HUB ZARAGOZA

In the best case...

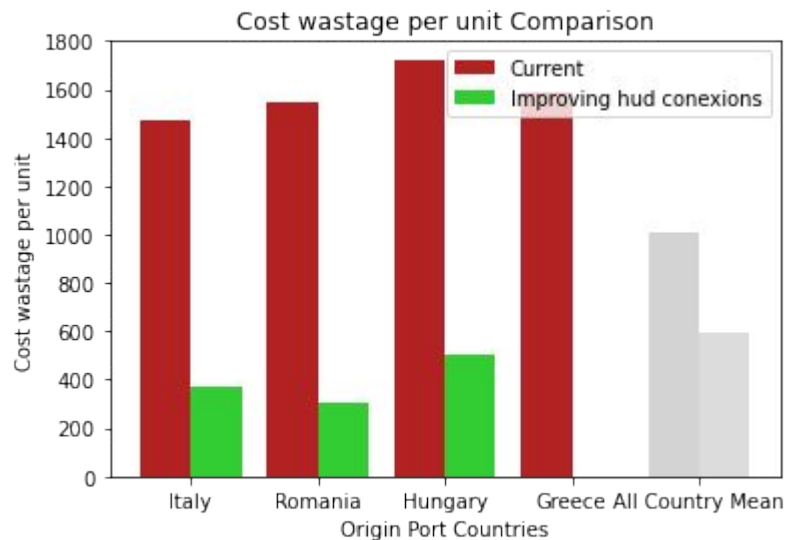


~1300€ per unit cheaper

~x10 less CO2 per unit

~3000km less distance traveled

HUB ATHENS



In the best case...

~1200€ per unit cheaper

~x4 less CO2 per unit

~4000km less distance traveled

BETTER SUPPLIERS

Products having over **50%** delay rate

58% in 1455 orders

62% in 191 orders

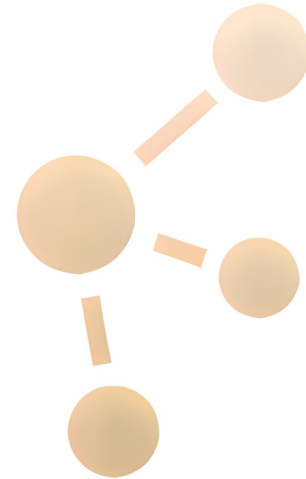


THANK YOU



ANY QUESTIONS?

Credits:
Slides template Slidesgo
Illustrations: Storyset



FUNCTIONARIOS

DATA ANALYTICS