



RAILLIVE!

When Travel Plans Change

The Economics of Passenger Cancellations

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Revenue management is the art
and science of

“selling the right product to the
right customer at the right price at
the right time”

....then what? Life happens.



Why Should we Care About Cancellations

Non negligible
share of bookings
are cancelled

Around 10% for
most operators,
can go to over 50%

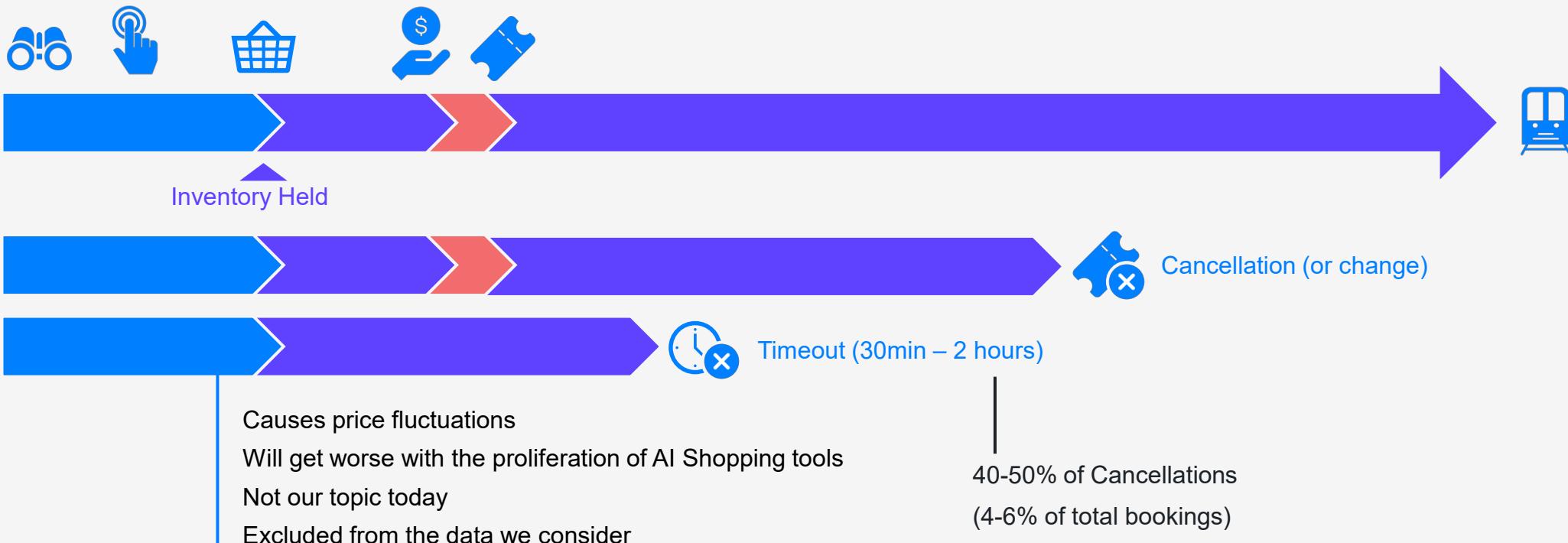
Impacts our
service and
revenues

Flexibility of travel
has value for
passenger

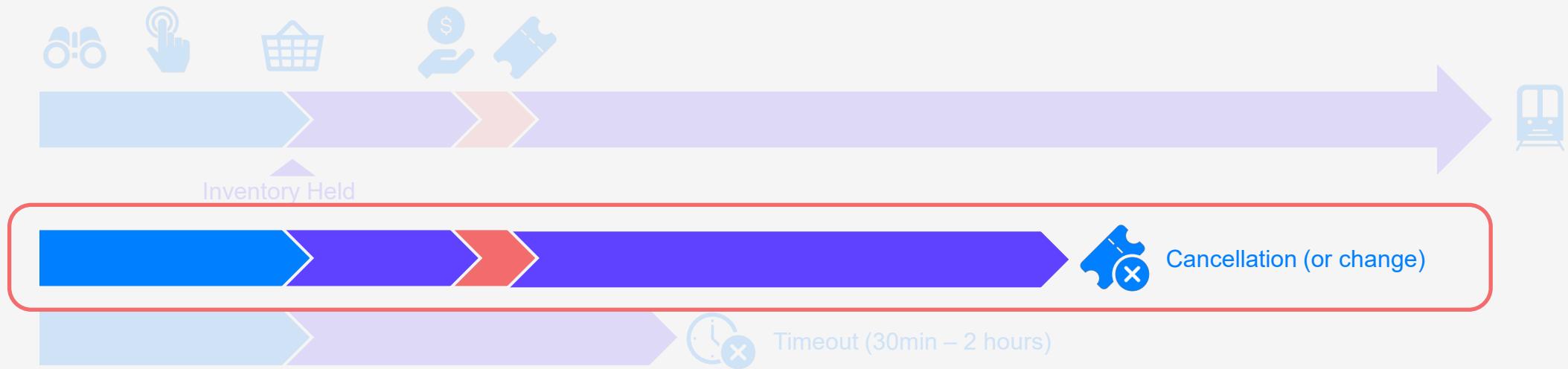
Preliminary Inventory Holding

When Look-to-Book holds inventory, it is like a short-term cancellation

From 30 minutes to two hours



Preliminary Inventory Holding



Today we focus on cancellations (and changes) of fully booked travels

Agenda

- 1 Passengers Value the Ability to Change
- 2 Changes have Costs
- 3 What Can we do About it?



1 Passengers Value the Ability to Change

Why Do People Cancel?

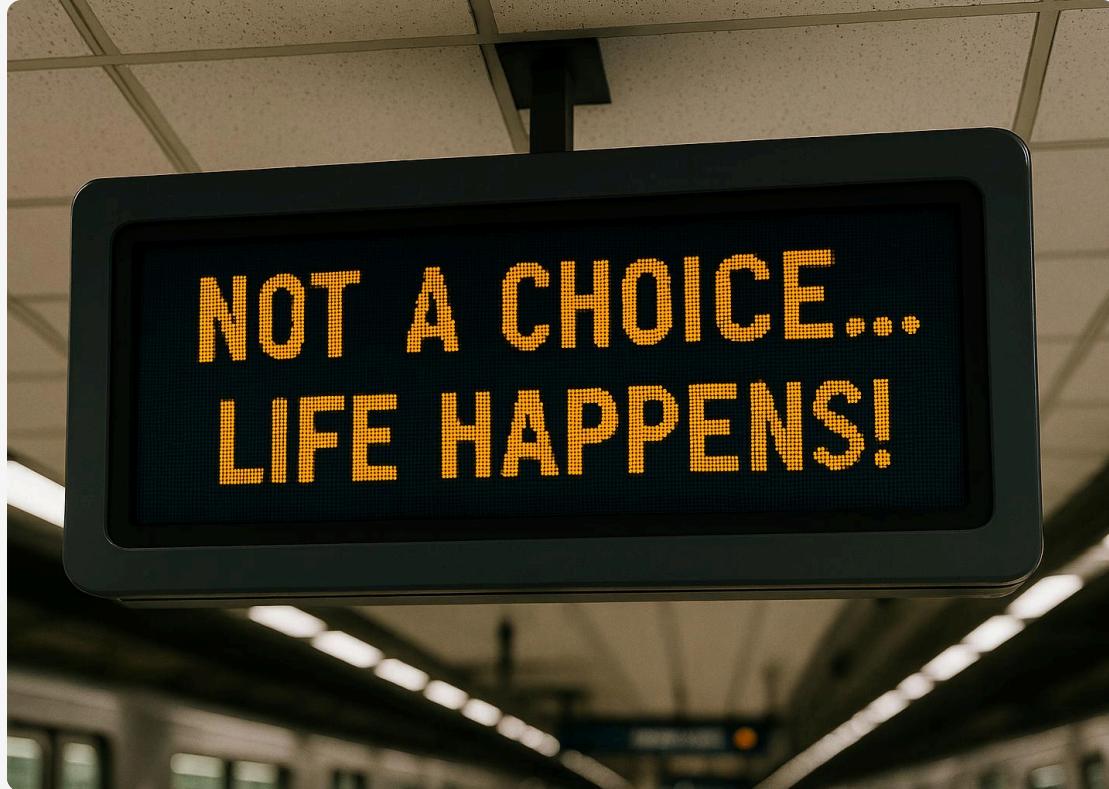


They don't travel



Change for something else

Why Do People Cancel?



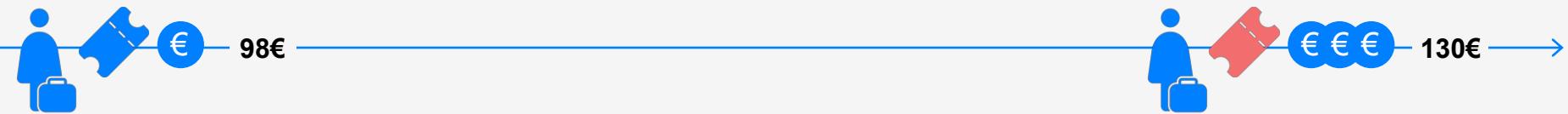
- **Changed travel plans drive cancellations**, not mere buyer's remorse
- We can't prevent it, only manage it

Some customers game the operator's RM

- Stock up on low price
- Option shopping

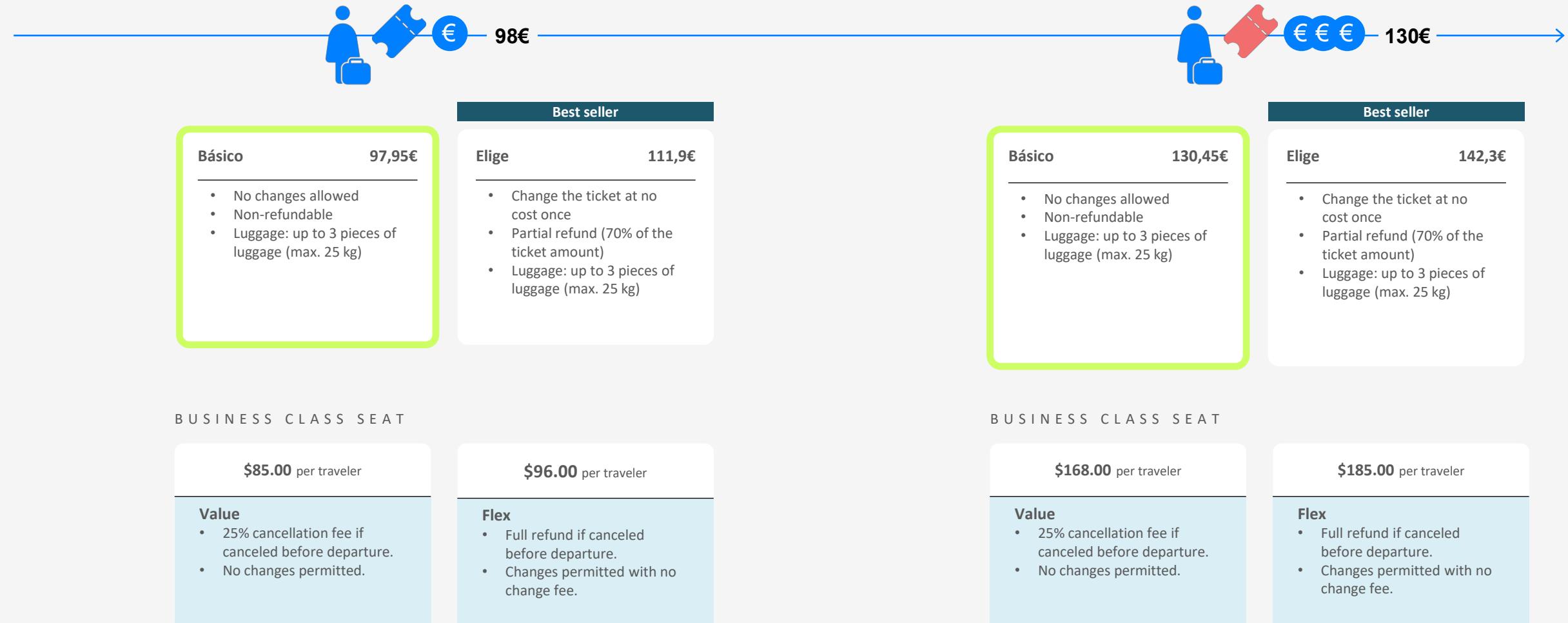
Why Passengers Value the Cancellations

- Secure the ability to travel by booking now
- Avoid financial loss
 - Certainty they don't spend money on something they won't use
- Stress/anxiety reduction (harder to monetize but real)
- It enables a decisions under uncertainty



Buy now and risk losing your ticket or wait later and risk a higher price (or not travel)

What is the Value of Cancellations



What is the Value of Cancellations

Buy Now

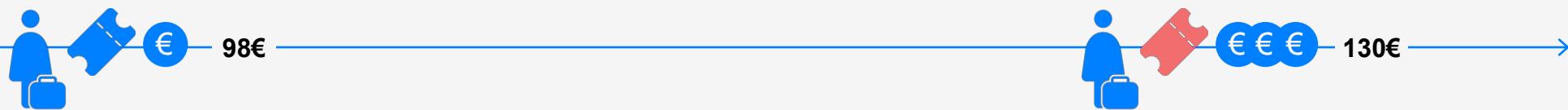
13.95 € Premium
(111.9 € Elige Price – 97.95 € Básico Price)

Free Change or 33 € (30%) Cancellation fee

VS

Buy Later

32 € Price Increase



Best seller	
Básico	97,95€
<ul style="list-style-type: none"> • No changes allowed • Non-refundable • Luggage: up to 3 pieces of luggage (max. 25 kg) 	

Best seller	
Elige	111,9€
<ul style="list-style-type: none"> • Change the ticket at no cost once • Partial refund (70% of the ticket amount) • Luggage: up to 3 pieces of luggage (max. 25 kg) 	

Best seller	
Básico	130,45€
<ul style="list-style-type: none"> • No changes allowed • Non-refundable • Luggage: up to 3 pieces of luggage (max. 25 kg) 	

Best seller	
Elige	142,3€
<ul style="list-style-type: none"> • Change the ticket at no cost once • Partial refund (70% of the ticket amount) • Luggage: up to 3 pieces of luggage (max. 25 kg) 	

The Value of a More Flexible Option

13.95 € Premium

Free Change or 33.57 € (30%) Cancellation fee, 78.33 € Refund

Best seller			
Básico	97,95€	Elige	111,9€
<ul style="list-style-type: none"> • No changes allowed • Non-refundable • Luggage: up to 3 pieces of luggage (max. 25 kg) 		<ul style="list-style-type: none"> • Change the ticket at no cost once • Partial refund (70% of the ticket amount) • Luggage: up to 3 pieces of luggage (max. 25 kg) 	

Example if I have a 20% probability the passenger can't travel at the booked time

$$\begin{array}{rcl}
 \text{Elige Option Value} & = & \text{Probability to Cancel} \times \text{Cost Avoided on Cancel} - \text{Premium for the Elige Option} \\
 1.72 \text{ €} & = & 20\% \times 78.33 \text{ €} - 13.95 \text{ €} \\
 & & 15.67 \text{ €}
 \end{array}$$

It is rational to buy the Elige option when there is a 20% probability of cancellation

The Value of a More Flexible Option (Premium)

32.67 € Premium

(130.65 € Prémium Price - 97.98 € Básico Price)

Free Change or
No Cancellation Fee

Many other benefits

Best seller		The most comprehensive	
Básico	97,95€	Elige	111,9€
<ul style="list-style-type: none"> • No changes allowed • Non-refundable • Luggage: up to 3 pieces of luggage (max. 25 kg) 		<ul style="list-style-type: none"> • Change the ticket at no cost once • Partial refund (70% of the ticket amount) • Luggage: up to 3 pieces of luggage (max. 25 kg) 	<ul style="list-style-type: none"> • No changes allowed • Non-refundable • Luggage: up to 3 pieces of luggage (max. 25 kg)
		Elige Confort	111,65€
			<ul style="list-style-type: none"> • Extra-large Confort seat • Unlimited free changes, • Puente AVE (high-speed), Changes due to missed trains, Free change of ticket holder • 100% of the ticket price refunded up to 7 days after purchase; 95% of the ticket price refunded after this period
		Prémium	130,65€

Example if I have a 20% probability the passenger can't travel at the booked time

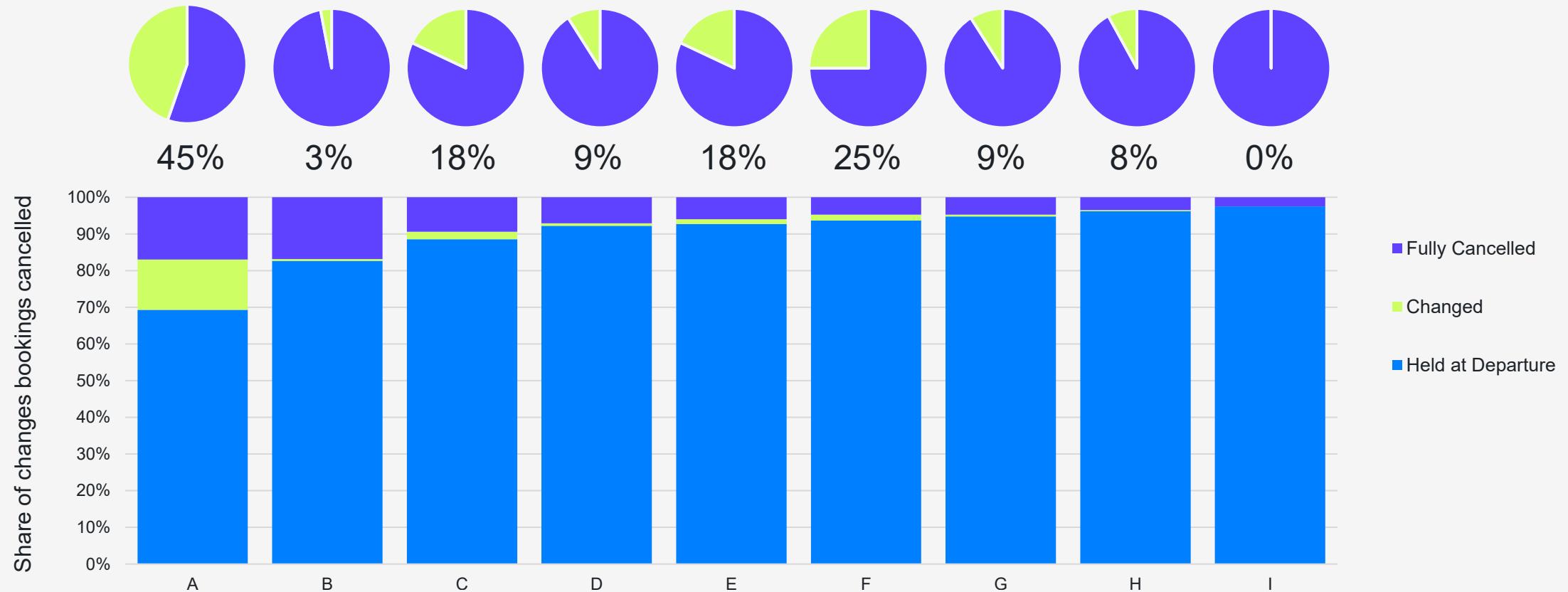
$$\text{Elige Option Value} = \text{Probability to Cancel} \times \text{Cost Avoided on Cancel} - \text{Premium for the Elige Option}$$

$$-13.07 \text{ €} = 20\% \times 97.95 \text{ €} - 32.67 \text{ €}$$

$$19.60 \text{ €}$$

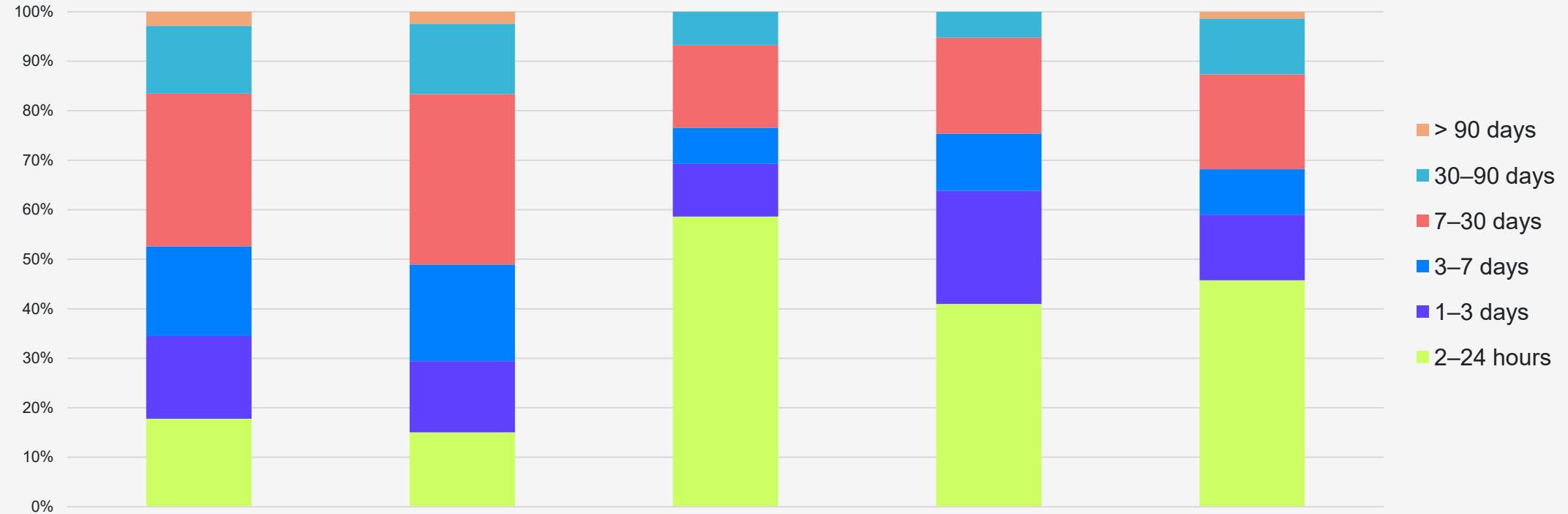
With a 20% probability, it isn't rational to buy the Prémium option for cancellation alone

Share of Changes VS Full Cancellations



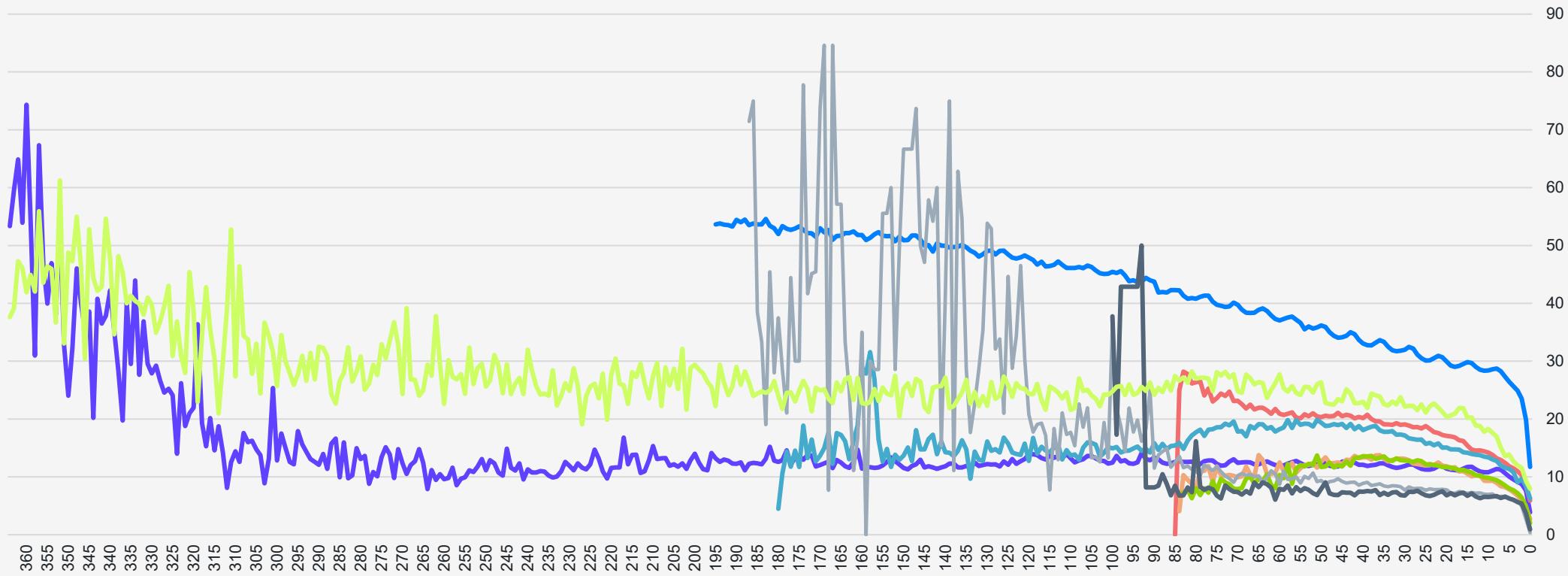
Making it easy to exchange tickets makes a big difference

How Soon After Booking do Passengers Cancel



Most passengers quickly confirm their travels

The Longer in Advance the More Likely it Will Change?



- Not necessarily: tends to stabilize and depends on market
- Higher rates on sales opening

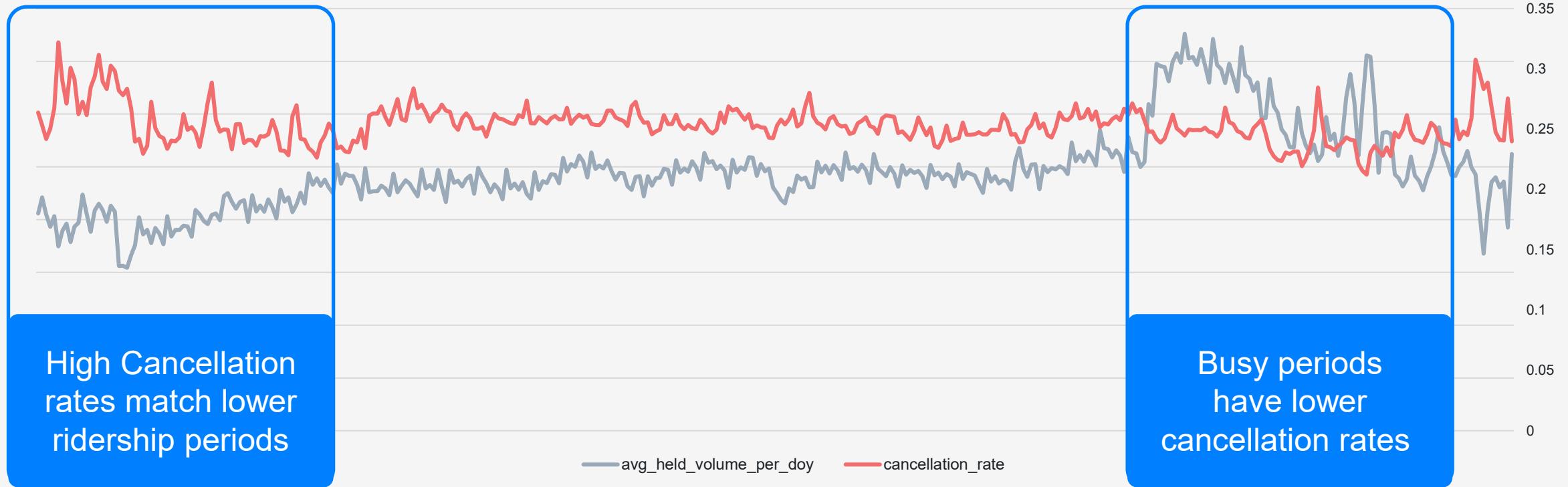
Is there a Weekly Pattern to Cancellations?

Compared to When They Booked

		Day of Week when Cancelled						
		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Day of Week when Booked	Sunday	13.72%	16.46%	15.27%	15.40%	15.70%	14.18%	9.27%
	Monday	7.20%	17.60%	20.18%	18.29%	16.72%	13.85%	6.16%
	Tuesday	7.35%	14.26%	18.07%	20.59%	18.31%	15.01%	6.42%
	Wednesday	7.81%	15.49%	14.74%	18.33%	20.59%	16.26%	6.78%
	Thursday	8.40%	16.98%	15.83%	14.89%	18.52%	18.09%	7.29%
	Friday	9.23%	17.91%	16.76%	15.62%	15.39%	16.79%	8.30%
	Saturday	14.12%	15.49%	14.76%	14.61%	15.35%	14.42%	11.24%
	Grand Total	9.00%	16.33%	16.79%	17.19%	17.52%	15.65%	7.51%

- This figure excludes the first week after booking
- People rarely cancel on a Saturday
- Strong Weekday vs Weekend
- Similar patterns compared to time of travel

Is there a Seasonality to Cancellations?



- Yes, but it is different but related to the booking seasonality.
- No hard rule.

Ex: Low ridership days tend to have high cancellations

2 Changes Have Costs

What is the Cost of Cancellations

Unnecessarily
spilling if the
train gets full
before departure

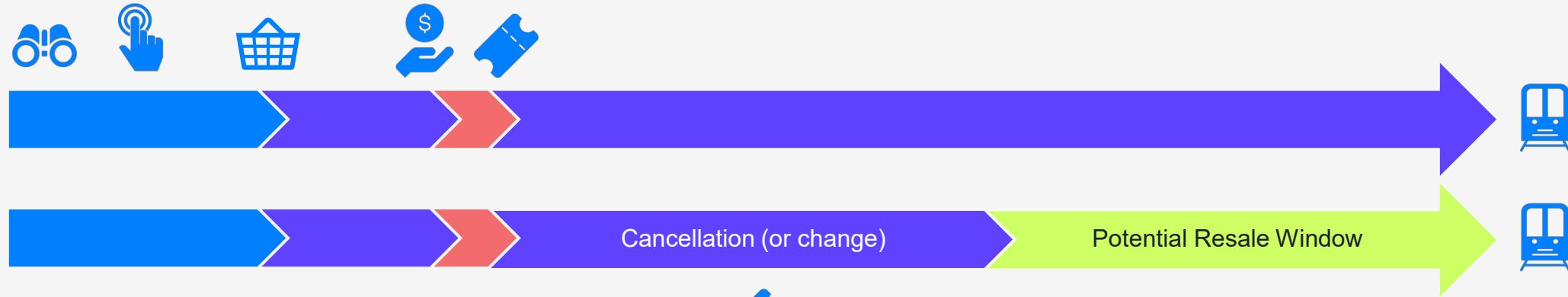
Spoilage

Early
stifle price:
too high,
too soon

“Wasted”
Journeys –
passengers with
a reservation
that isn’t used
Customer frustration

What is the Cost of Cancellations

Lost Opportunity



- Longer the period, higher is the resale probability
- Higher price closer to departure

$$\text{Lost Opportunity} = \text{Refund Paid} - \text{Resale Probability} \times \text{Resale Price}$$
$$39.33\text{€} = 78.33\text{ €} - 30\% \times 130\text{ €}$$
$$39\text{ €}$$

How Serious is This Lost Opportunity Cost

Are lost seats more likely to have been seats I've lost

Cancellations do not seem significantly more frequent on busy trains

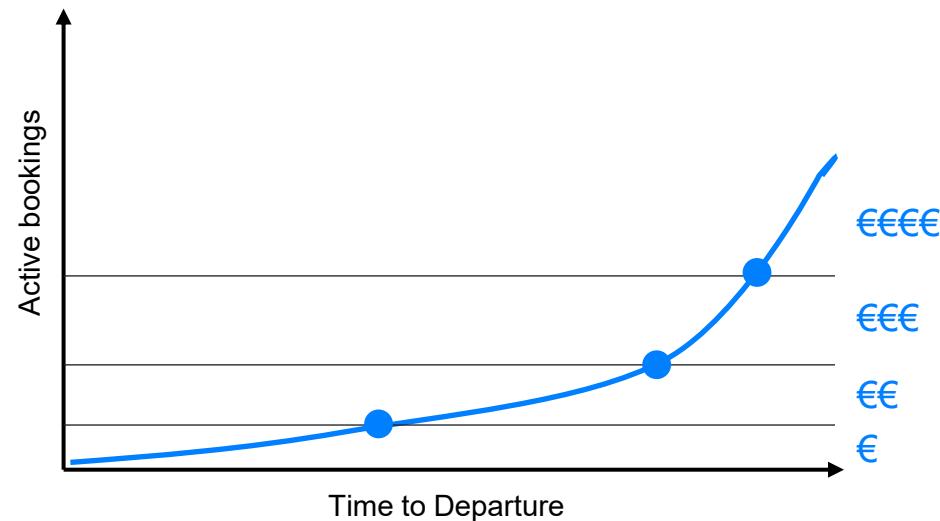
	Operator A	Operator B
Busy trains (Max LF \geq 85%)	6.9%	10.5%
Not busy trains (Max LF < 85%)	6.8%	10.4%

Early Stifle Price : Too High Too Soon

Inventory Consumption Drives Prices

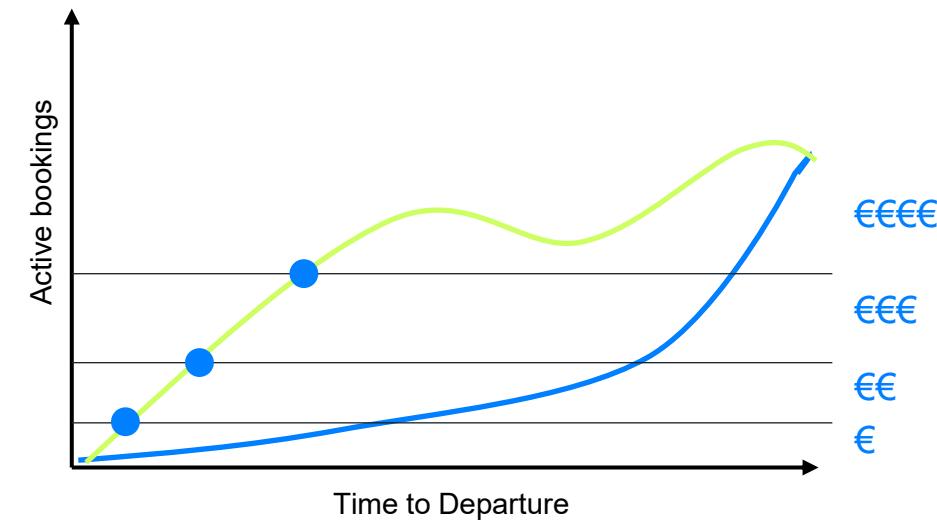
Ideal Inventory Consumption

- Bookings that are ultimately not cancelled.
- Never goes down
- Reliable and convenient for allocating inventory



Inventory Consumption with Booking Churn

- Bookings that will be cancelled consume inventory in the meantime
- Causes prices to go up



Do Passenger Really “Game” Revenue Management?

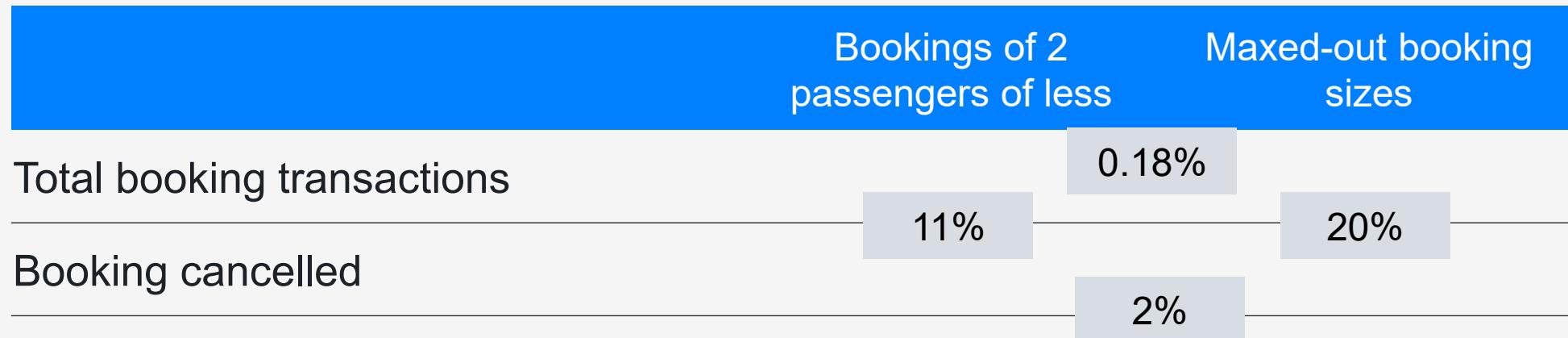
- Speculative booking:
Stocking up on low fares
- Travel Options Shopping



Stock up on Low Price

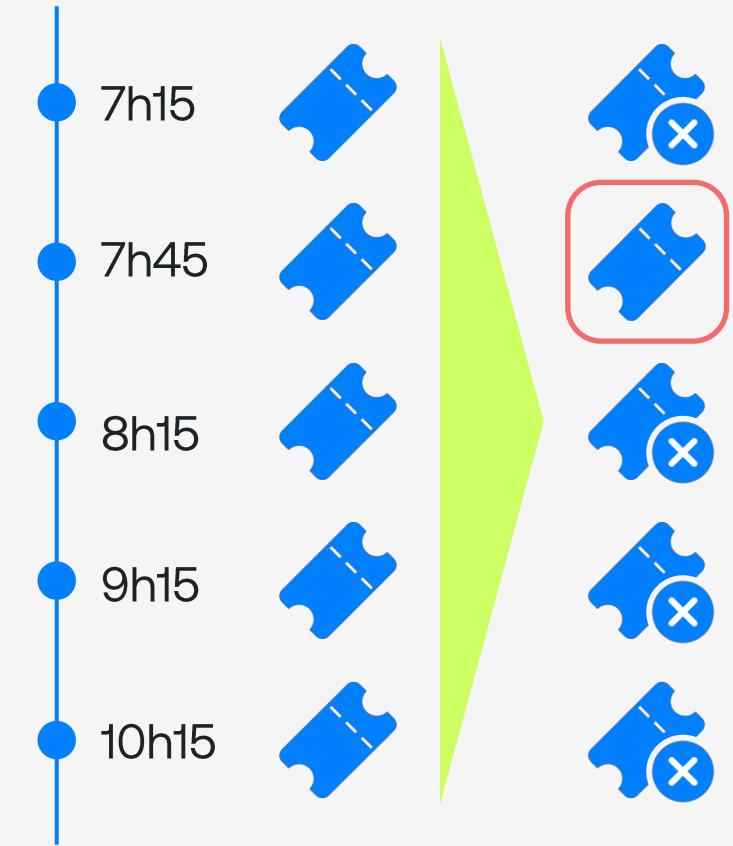
Are lost seats more likely to have been seats I've lost

- Some customers make bookings of the maximum allowed amount early in the horizon to cancel them later
 - Often the same pattern for several weeks
- If it is resell, named PNR do not seem to be a deterrent
- Targeted at popular travel times



Travel Option Shopping

- Passengers book fully refundable for several train options
- Once travel plan are settled, cancel all options except the one they use



Some passengers really act to avoid the effect of revenue management

3

What Can we Do About it?

What Can We Do?



We need cancellation or change options

- Help to secure the buying decision
- Avoid wasted Journeys or no-shows passengers with a reservation that isn't used

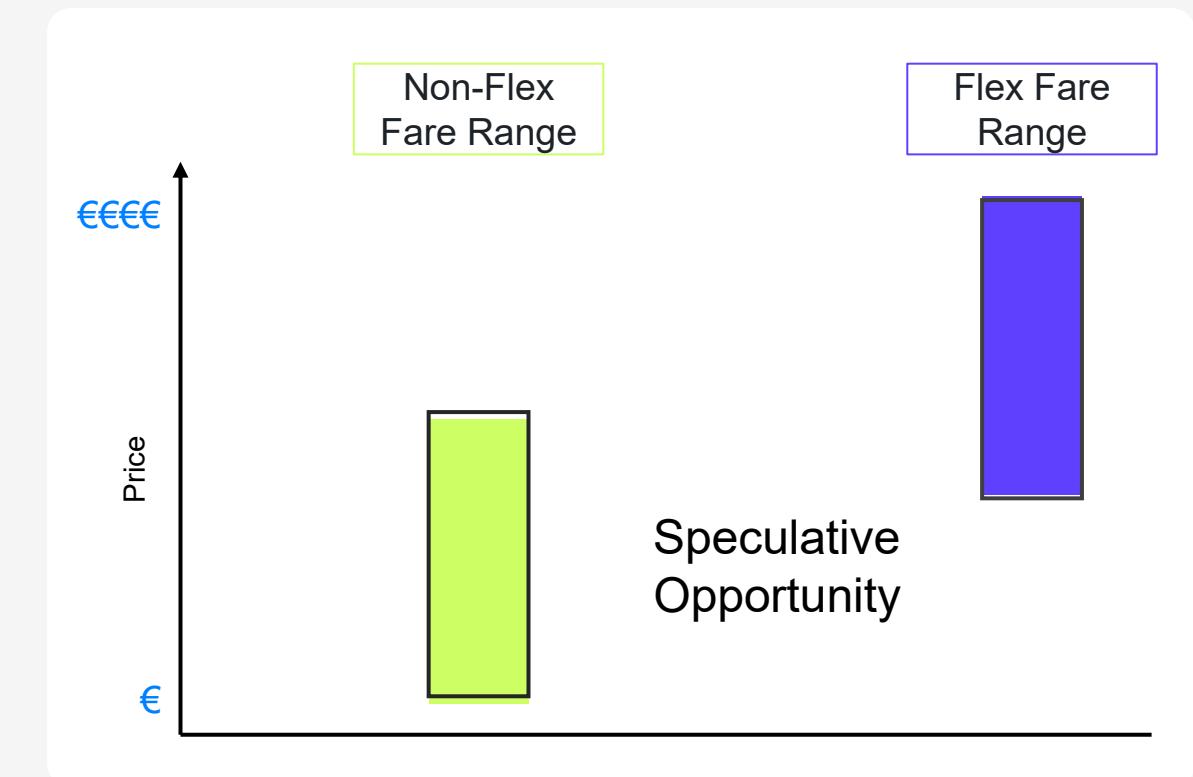
Limit opportunities for unintended use of cancellations and flexible products

Control distortions in our pricing

Be Mindful of Fare Ranges Overlap

Limit Unintended Use of Flex Products

- Speculative opportunities arise when there is no downside to buying sooner
- Consider cancellation fees in the comparison

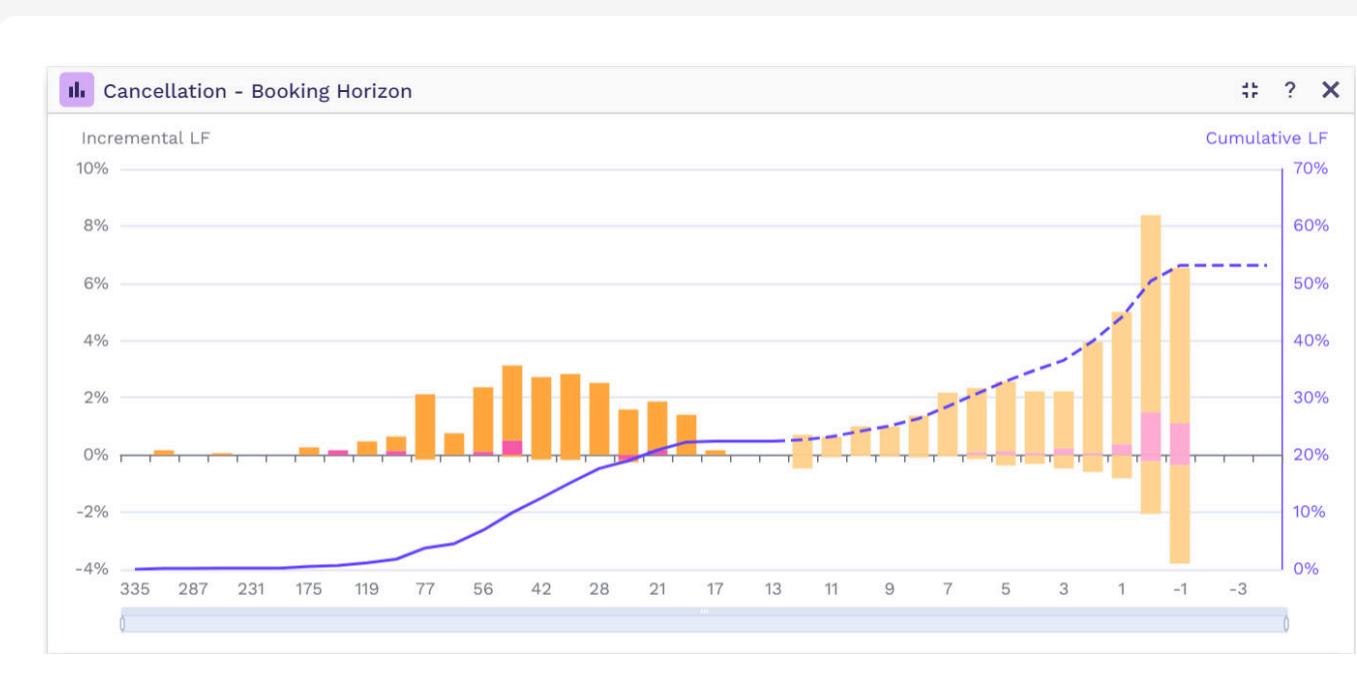


Forecast Cancellations

The key is forecasting bookings and cancellations separately

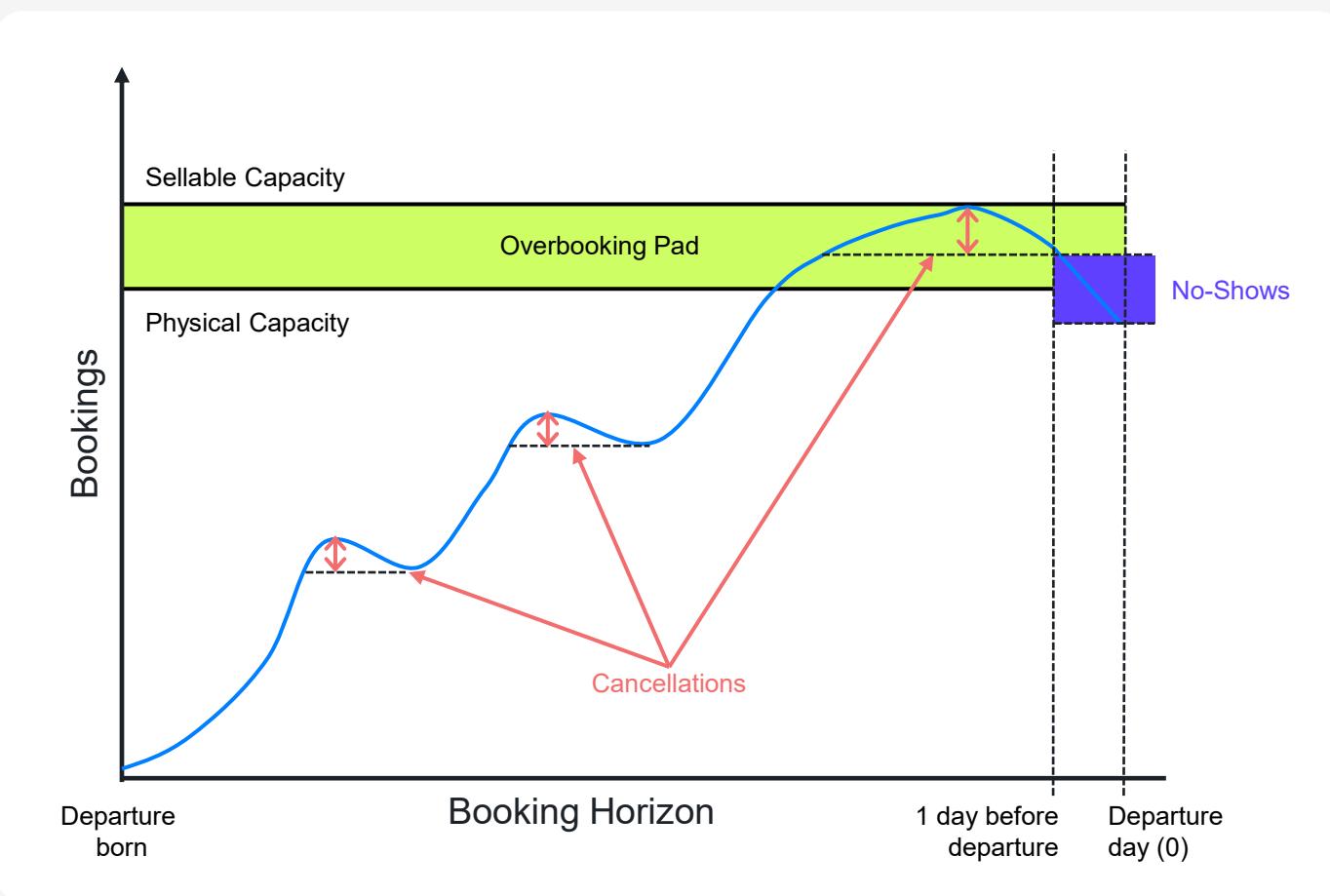
Benefit

Dynamically reallocate inventory to higher booking classes, strategically driving increased yield and revenue potential.



Cancellations vs Overbooking

The Traditional Answer to No-Shows and Cancellation



- Selling more tickets than the number of physical seats
- Introduced to compensate for future cancellations and No-Shows
 - Used to be 10-20% of passengers with reservations did not show up
 - Down to 3-5% after penalties and online rebooking tools
- Denied Boarding are costly
- Requires an appropriate process
- Most rail operators do not overbook

Conclusion

Life Happens, it's best to offer ways to accommodate!

Offer a flexible product

Make it easy to change

Offer cancellation in the period shortly after a booking (24h – 3 days – 7 days)

- High value for travelers, low cost to operator

Limit cancellations close to departure (lower resale probability)

- Or charge more for the option
- Can be based on expected demand
- Higher cost for operators

Look at your cancellations, you may find insights

expretio

pricing optimization & transport intelligence

Thank you!
Any questions?