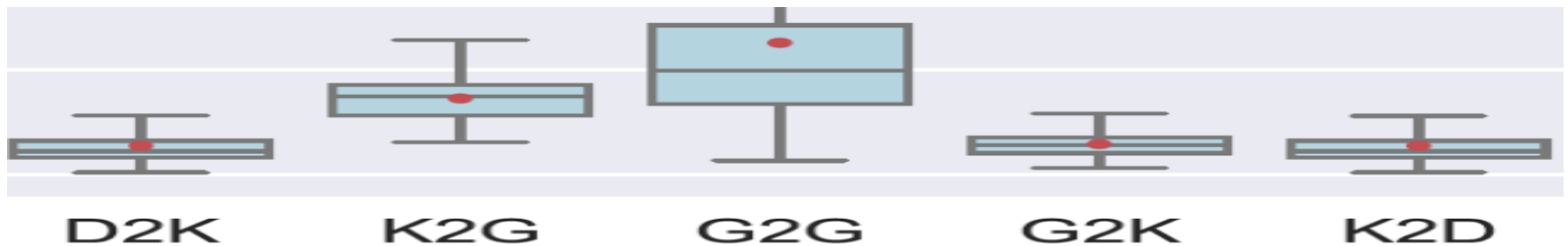


Managing dwell times

– a key challenge for the D2D target

Andrew Cook, Graham Tanner



>> *Challenge in context*

- > Definition, data, issue

>> *Exploring dwell times*

- > Behaviours, trends, relationships

>> *Future solutions*

- > Airport business model

- > Airline business model

>> *Issues for debate*

Challenge in context

Challenge in context

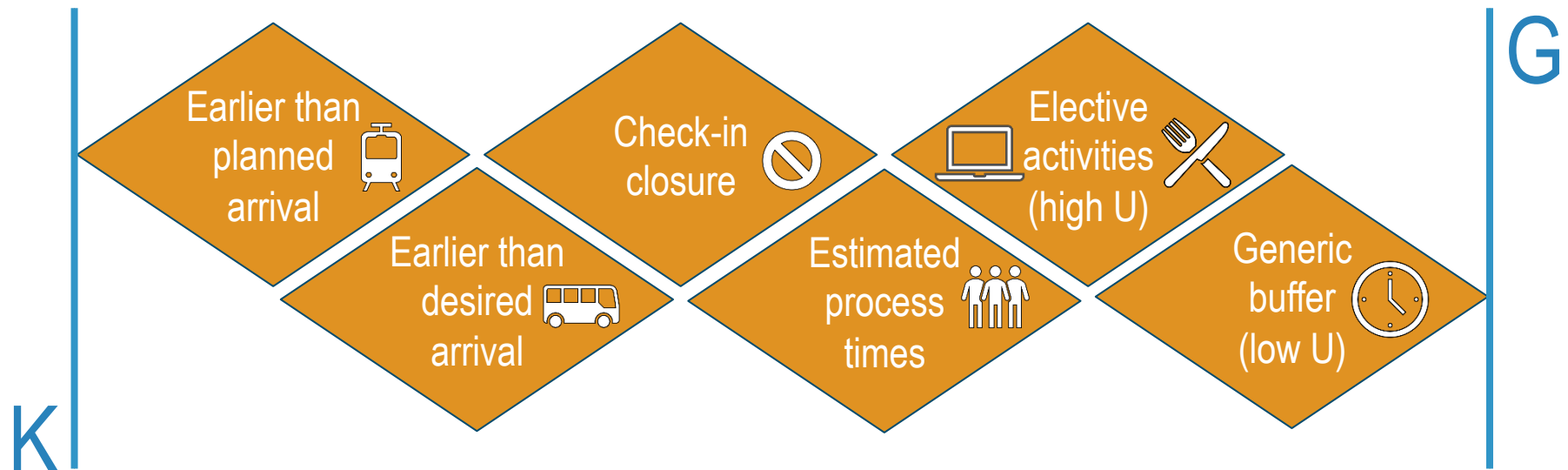
Dwell time definition

>> Dwell time = K2G

> some variation in metrics used by different airports

>> Different components

> complex definitions, overlaps, mutual dependencies



> typical minima across AOs, LHR–EU: kerb: -2H00 (rec.), check-in: -0H45, gate: -0H20

> several analogies with airline buffer and turnaround times

Challenge in context

Data sources and wider model

- >> Dwell time data source (for following example slides)**
 - > large European hub**
 - > appx. 200k dwell time records in survey**
 - > mid-2012 to mid-2017**
 - > cleaned: outliers etc.**
 - > filtered: non-connecting, intra-European**

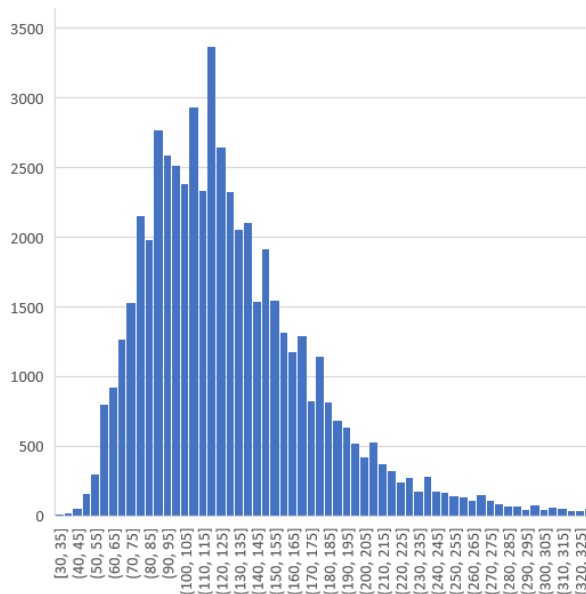
- >> Data (limited) from other large hubs to support validation**

- >> Wider model results and context in final presentation**

Challenge in context

The issue

- >> Average dwell time: 2H15
- >> Average access time: 1H20
- >> Simplistic sum for non-G2G: $1H20 + 2H15 + (0H40) + (1H20) = 5H35$
 - > several caveats
 - > dependency between access and dwell



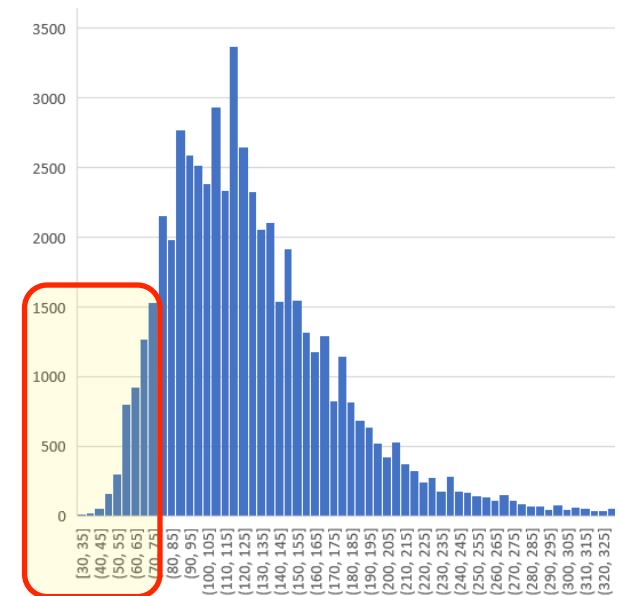
Connecting c.f. NC pax: +20%
Extra- c.f. intra-European: +40%

Exploring dwell times

Generic no-show rates: **3-6%**
Rebooking straw-polls:

Traditional carrier, return fares €170-210
Missed flight, rebook next €370-760

LCC 'rescue' fees up to €100
**GatwickConnects
'protected connection'** est. €100

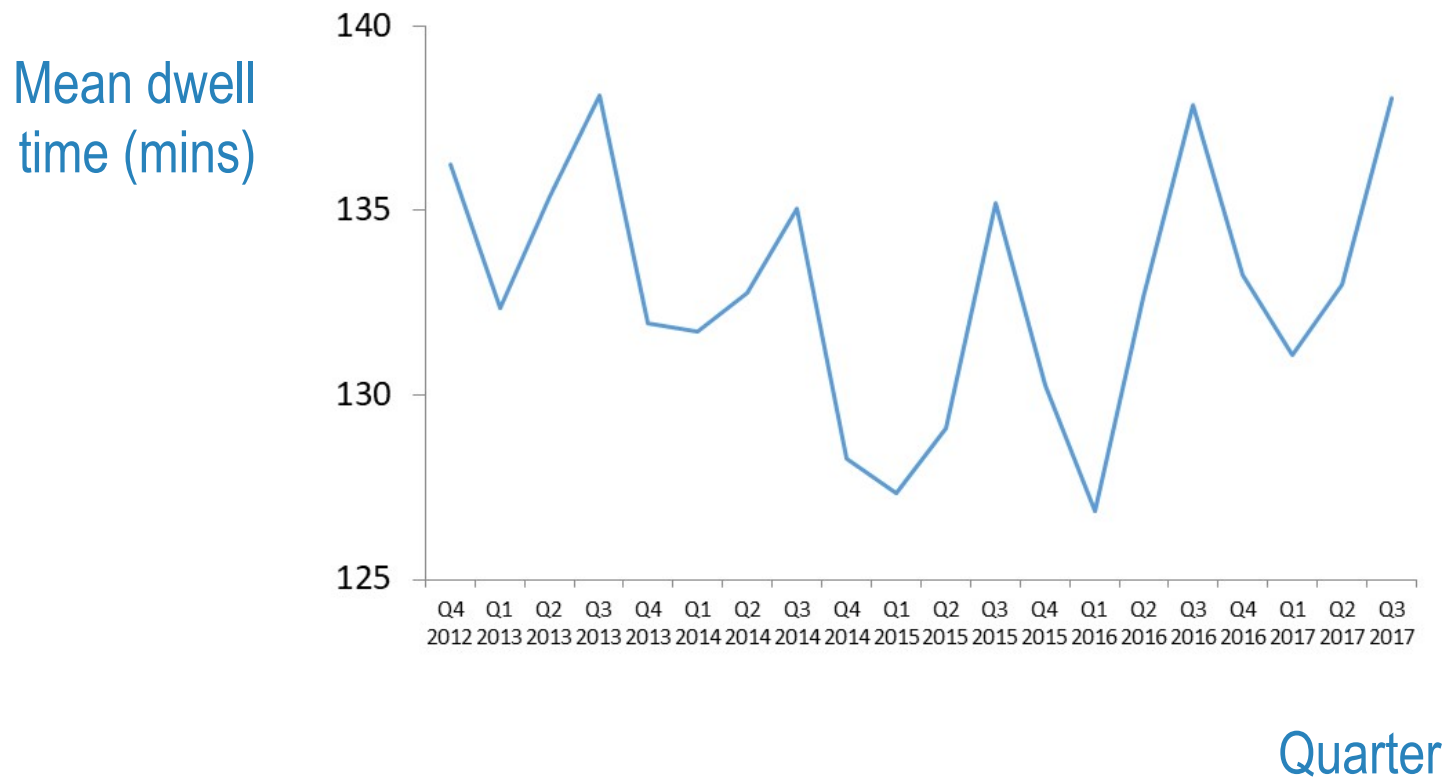


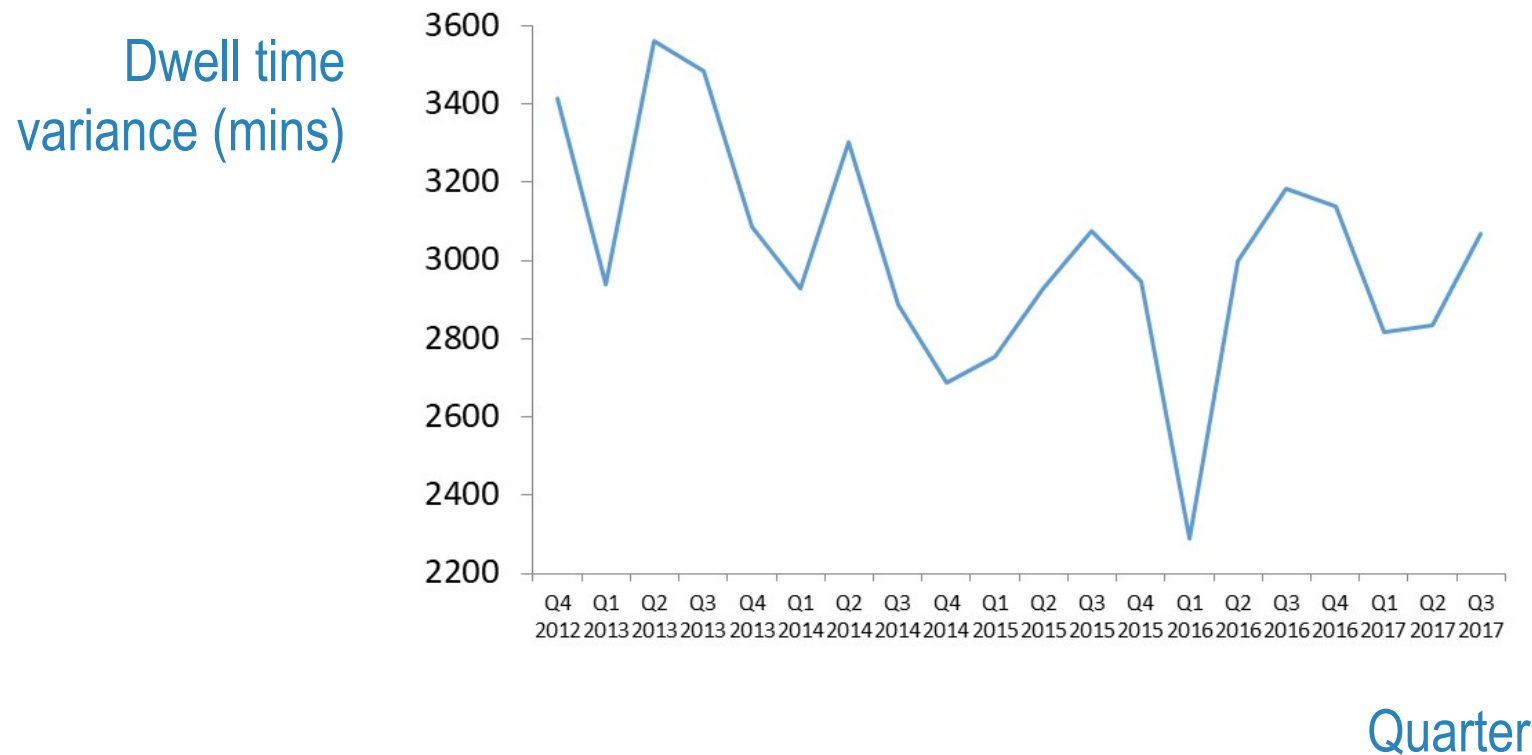
Average: 2H15

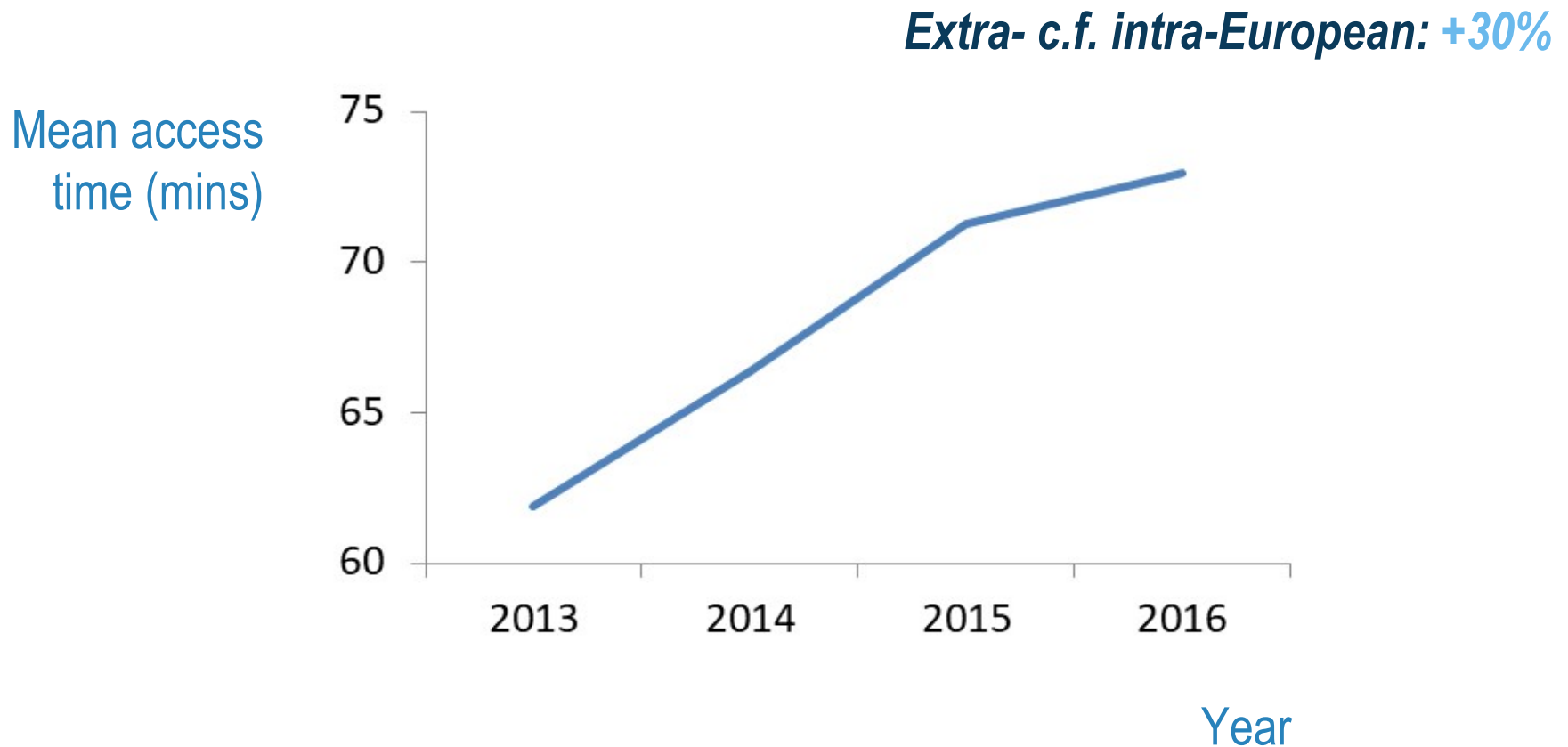
Median: 2H00

Lower 4.5 percentile: 1H10

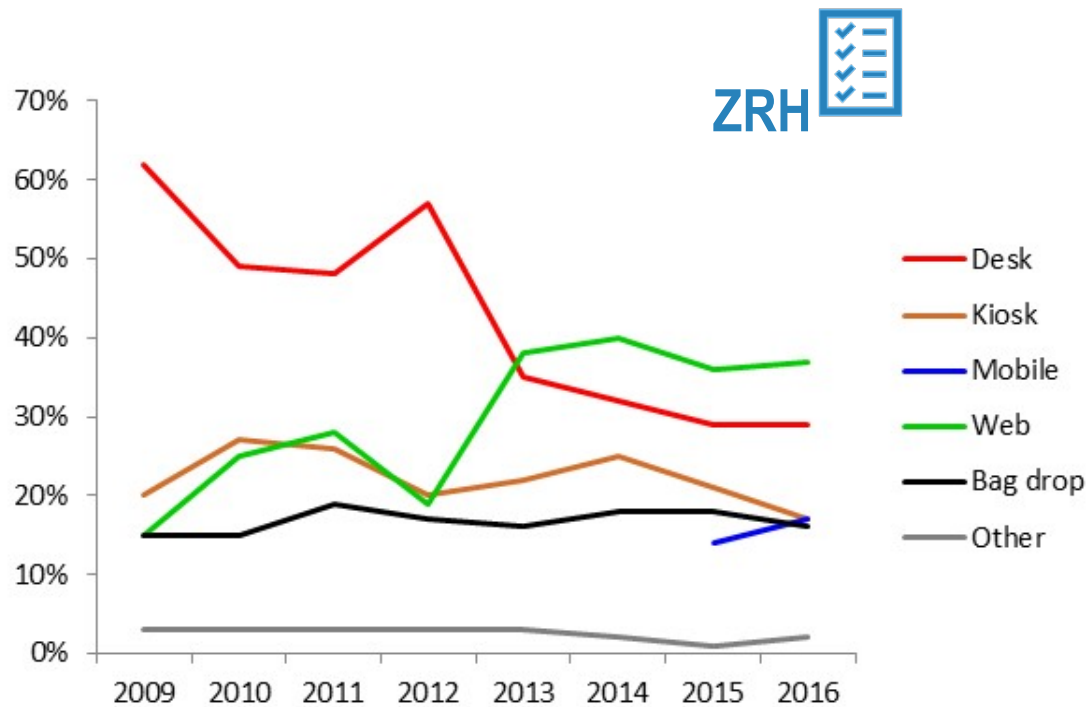
Exit expected utility theory ... enter prospect theory



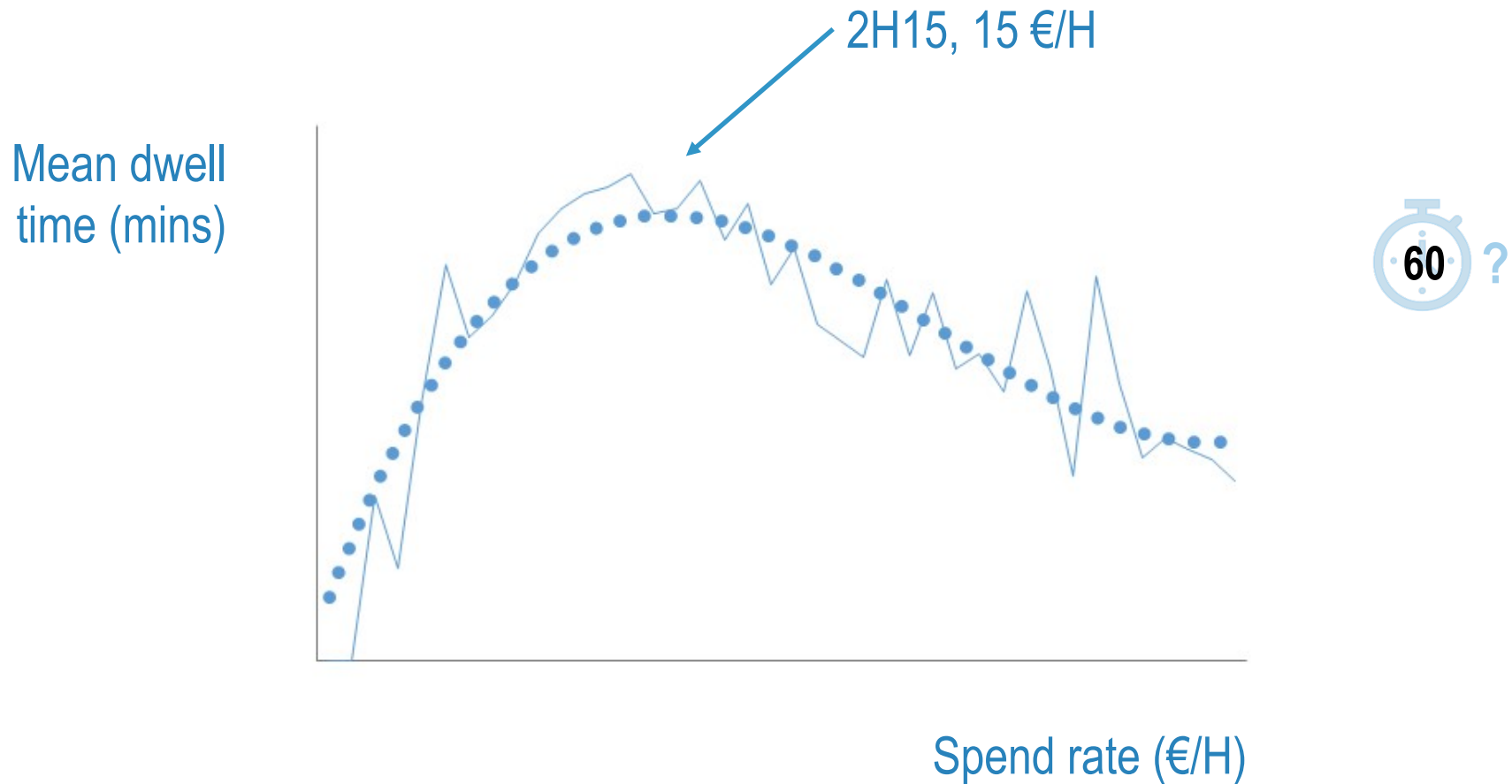




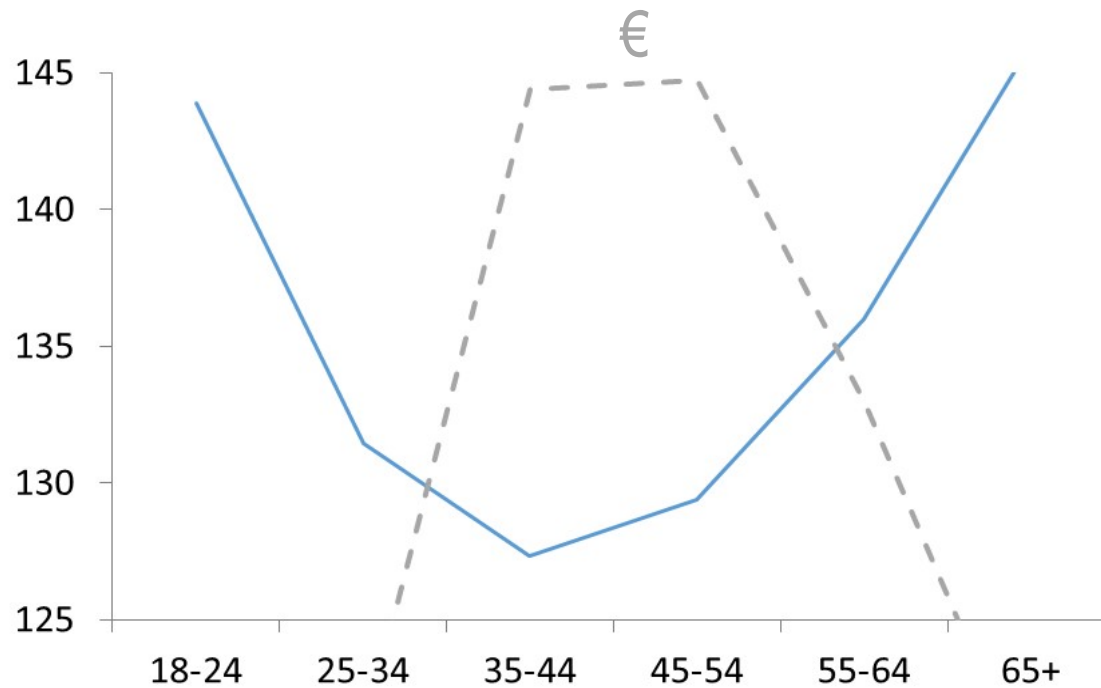
Options used
(multiple)



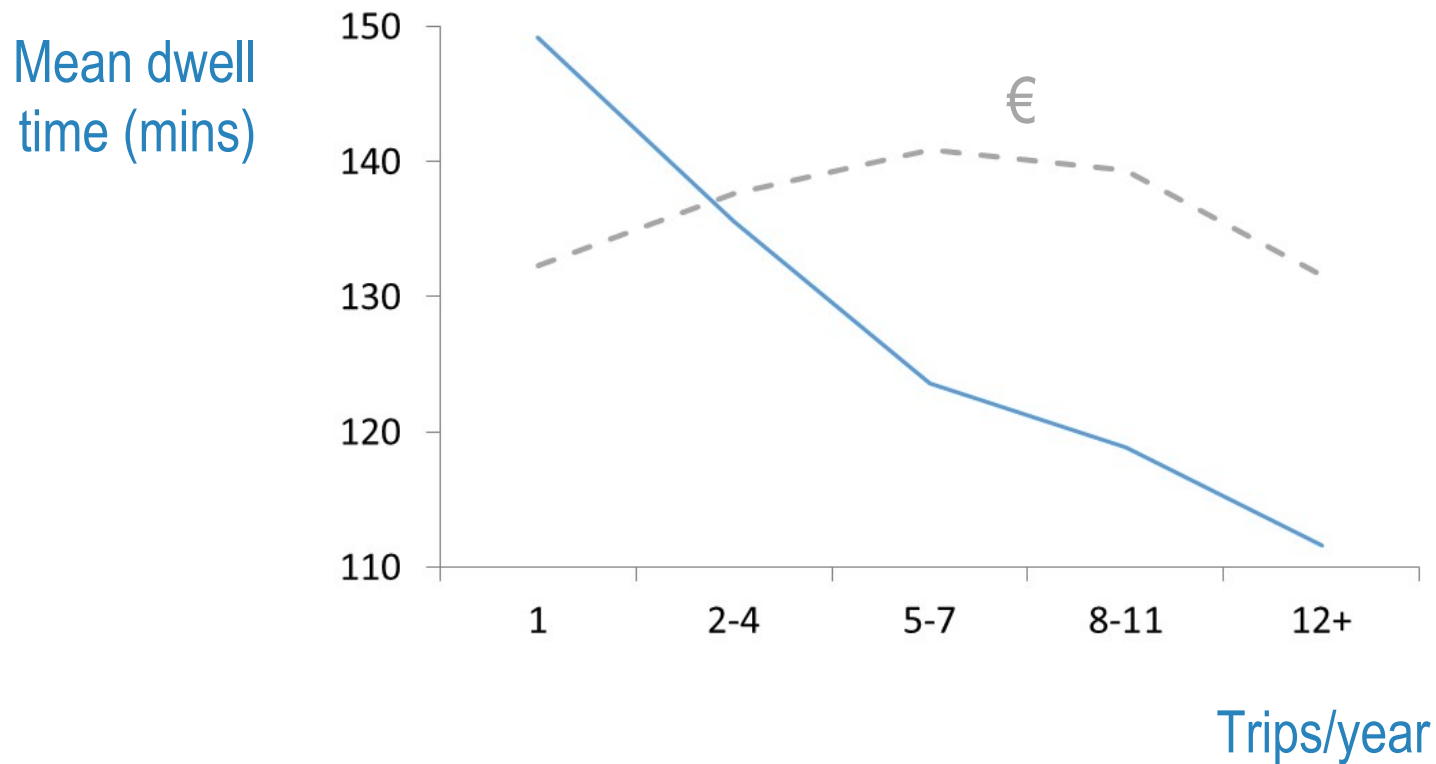
Year



Mean dwell
time (mins)



Age

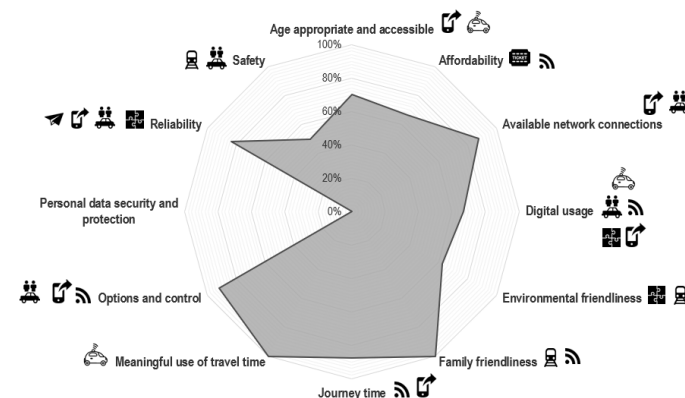


>> The story so far

- > loss aversion
- > no downward dwell trend
- > access times not rescuing D2D target ...
- > ... but (K2G) technologies are poised

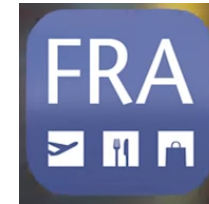
>> Airport business model: effects on spend

- > ageing population: compensating / mixed effect
- > decreased frequencies: complex / mixed effect
- > decreased dwell times: downward pressure



Future solutions

- >>> **Airport preparedness and development**
- >>> **Example: e-commerce implementation, Fraport app**
- >>> **'Omni-channel' functionalities**
 - > **order gifts, e.g. en-route to airport: many concessions, any terminal**
 - > 'Reserve & Collect', or delivered to gate (real-time info); also currency
 - > **delayed flight, directed beacon technology**
 - > invitation to restaurant with reserved table
 - > **buy from concessions, delivered to home**
 - > order groceries from in-bound flight, collect after reclaim
- >>> **Largest shopping complex in Germany**
- >>> **Concessions pay revenue-based rents**
- >>> **Aligned with general on-line retail fulfilment trends**



>> Airline business model

- > maximise yields, maximise profits
- > increasing load factors (c. 85%), decreasing flexibility (resilience)
- > economic incentive?

>> Integrated / regulatory solutions

- > 'Rail&Fly' such as AccessRail (AMS to QYG in GDS)



- > CIV guarantees (Convention Internationale pour le transport des Voyageurs)
- > Nederlandse Spoorwegen – commercial insurance (free market)
- > 'Social capacity' reserves (controlled market, with echoes of rescue fees)
 - > c.360-day inventory cycle – cost implications, yield management response

Issues for debate

>> *No silver bullet*

- > cost of reducing dwell times?
- > cost of doing nothing?

>> *Airport model*

- > how close to turn-up-and-go could work?

>> *Airline model*

- > economic incentive for increased flexibility?
- > sustainable capacity–cost equilibrium under regulatory approach?

>> *Alternative dwell time solutions*

- > full intermodal mobility management – (cost of) delay trade-offs?
- > [insert your idea here this afternoon!]



Thank you