Managing dwell times – a key challenge for the D2D target
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Managing dwell times
– a key challenge for the D2D target

Andrew Cook, Graham Tanner
Overview

**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

**Earlier than planned arrival**

**Earlier than desired arrival**

**Check-in closure**

**Estimated process times**

**Elective activities (high U)**

**Generic buffer (low U)**

- 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

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

Behaviours

Generic no-show rates: 3-6%

Rebooking straw-polls:

Traditional carrier, return fares €170-210
Missed flight, rebook next up to €100
LCC ‘rescue’ fees est. €100

GatwickConnects ‘protected connection’

Exit expected utility theory ... enter prospect theory

Average: 2H15
Median: 2H00
Lower 4.5 percentile: 1H10
Exploring dwell times

Trends

Mean dwell time (mins)

Quarter
Exploring dwell times

Trends

Dwell time variance (mins)
Exploring dwell times
Trends

Mean access time (mins)

Extra- c.f. intra-European:
+30%

Year

2013 2014 2015 2016

DATASET2050 Final Dissemination Event, Belgrade
Exploring dwell times
Trends

Options used (multiple)

Year
Exploring dwell times

Relationships

Mean dwell time (mins)

Spend rate (€/H)

2H15, 15 €/H

DATASET2050 Final Dissemination Event, Belgrade
Exploring dwell times
Relationships

Mean dwell time (mins)

Age

Mean dwell time (mins)
Exploring dwell times
Relationships

Mean dwell time (mins)

Trips/year
Exploring dwell times
Relationships

>> 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

> decreased dwell times: downward pressure
Future solutions
Future solutions
Airport business model

Airport preparedness and development

Example: e-commerce implementation, Frapport

‘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
Future solutions
Airline business model

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
Issues for debate
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